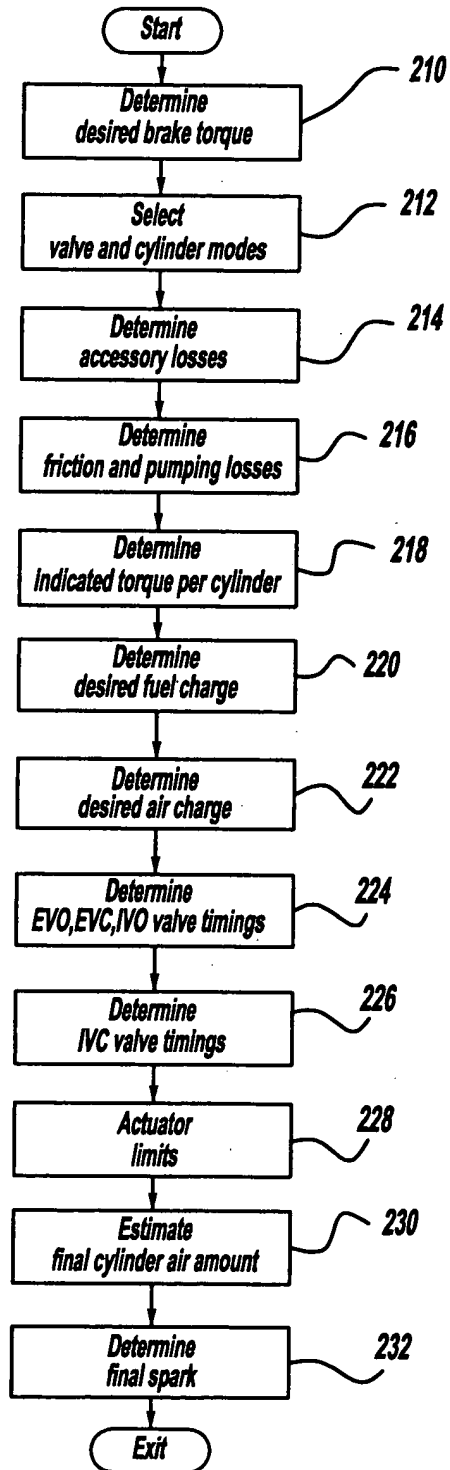
**FIG-1**

**FIG - 2**

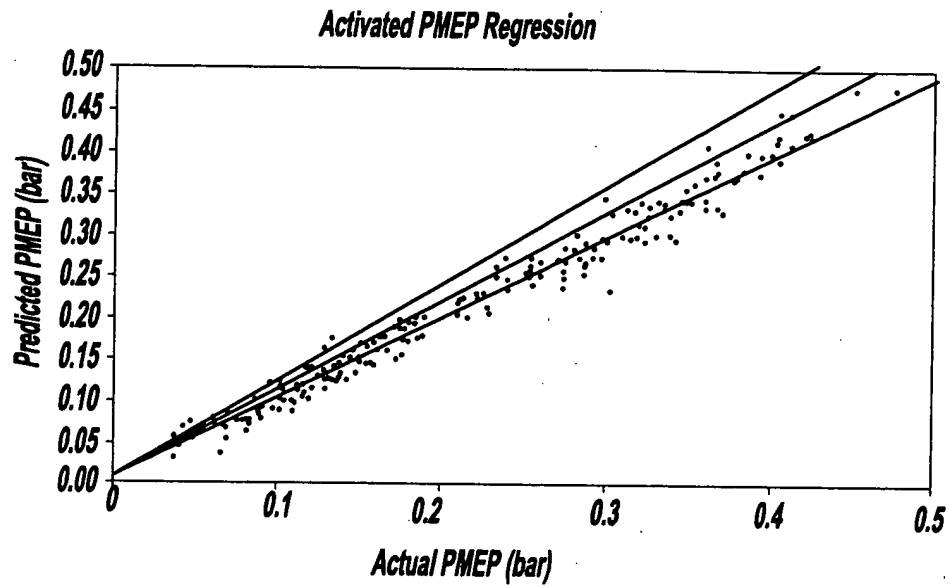


FIG - 3

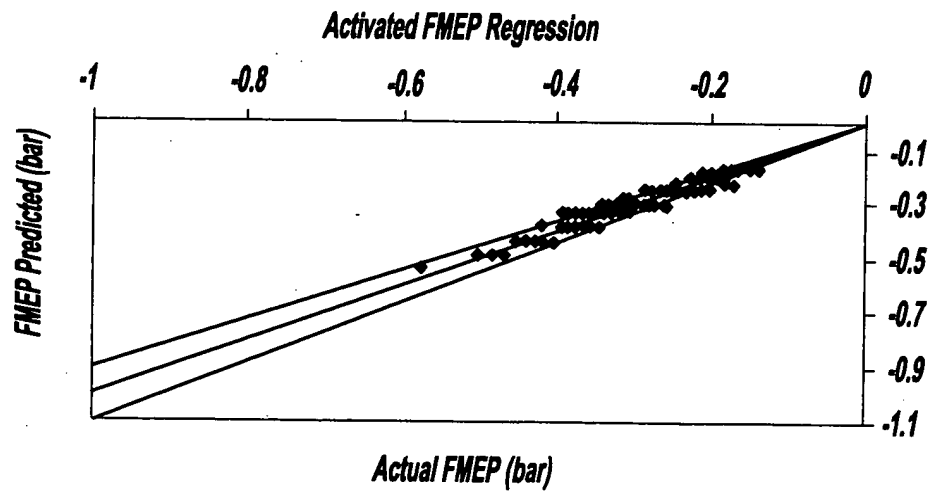
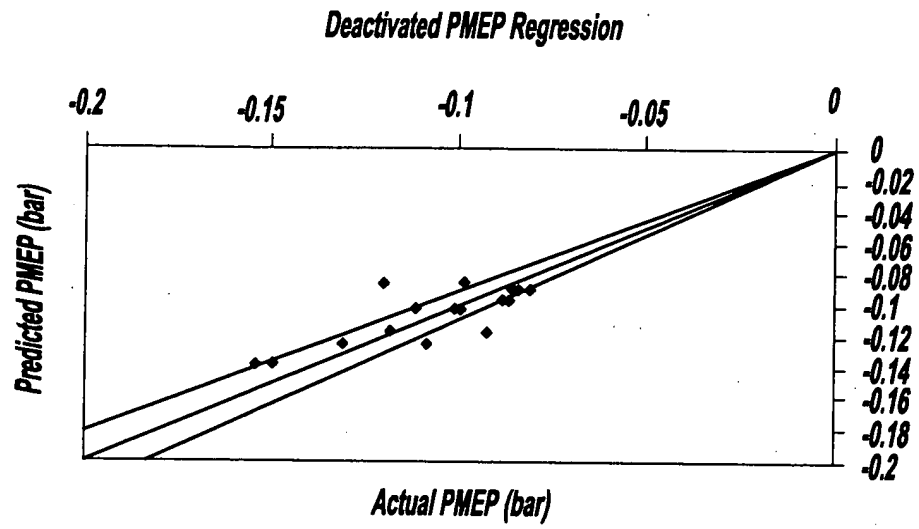
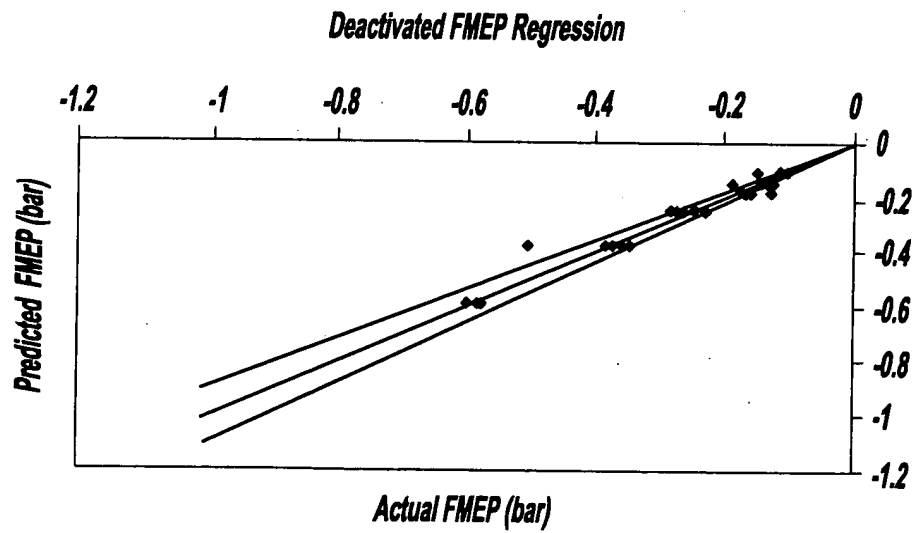
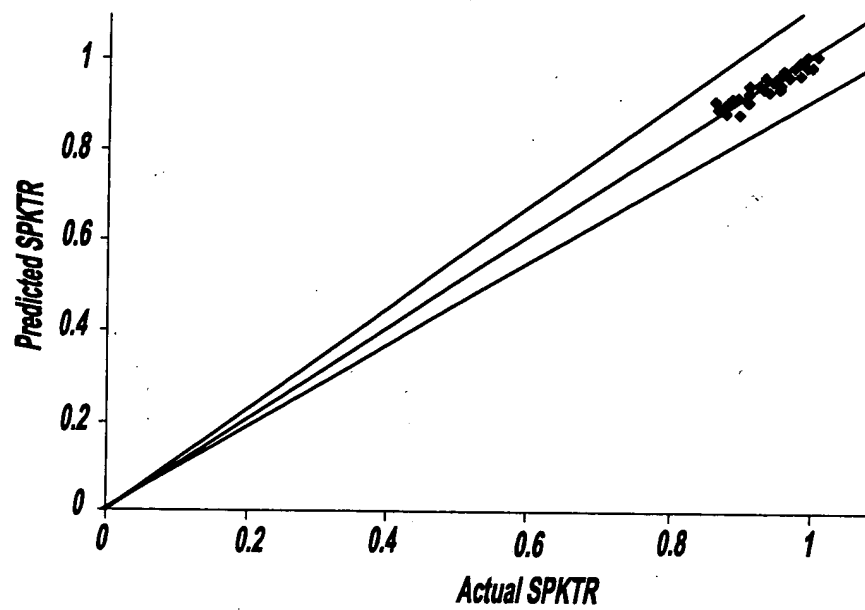
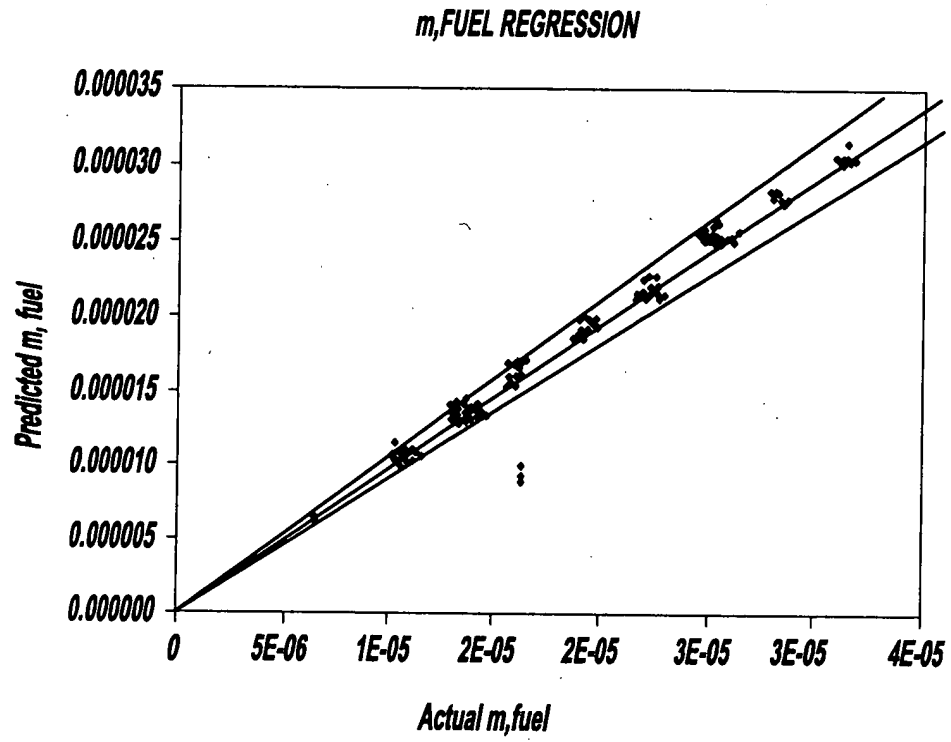


FIG - 4

**FIG - 5****FIG - 6**

Spark Retard Torque Reduction Regression**FIG - 7**

**FIG - 8**

7/60

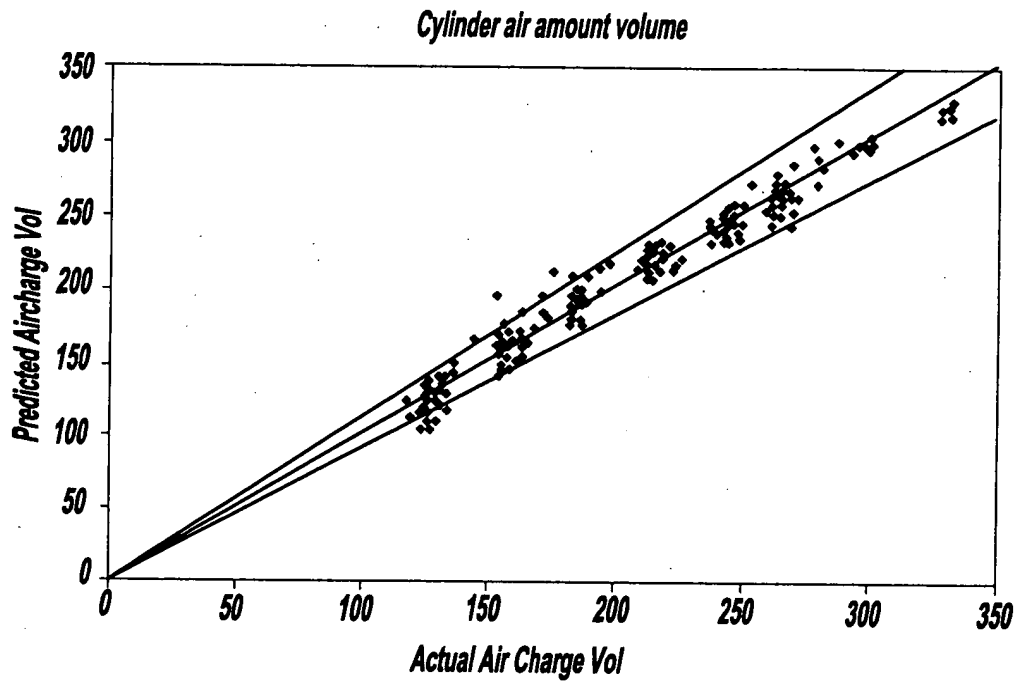
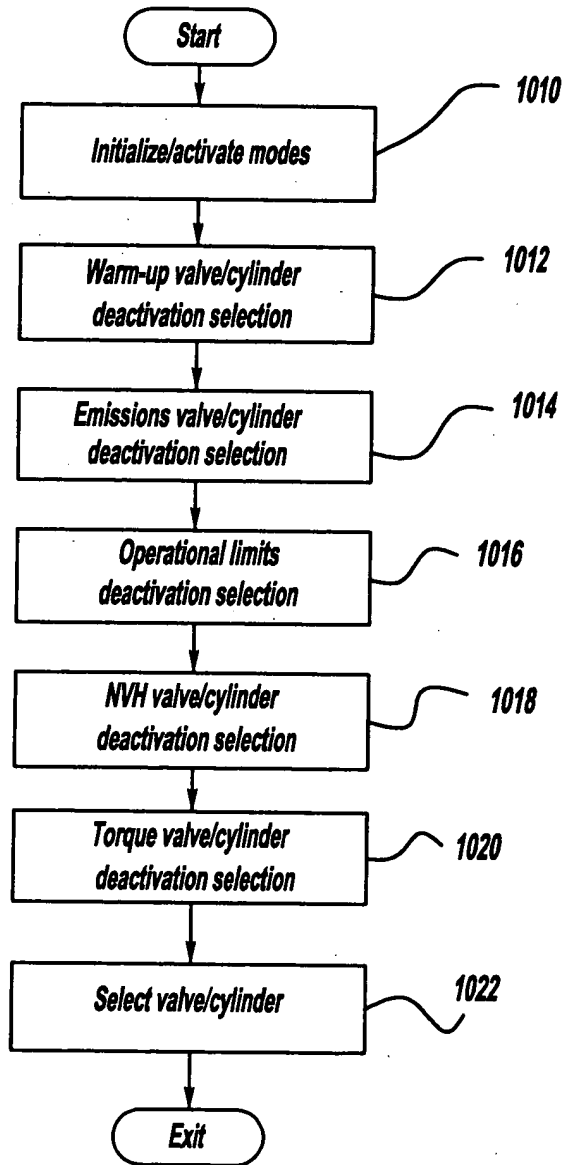


FIG - 9

**FIG - 10**

COLUMN 0 COLUMN 3

↓ DECREASING TORQUE ↑

V2	1	1	1	1	ROW 3
12-STROKE	1	1	1	1	
V4	1	1	1	1	
V8	1	1	1	1	ROW 0
	DIDE	DIAE	AIDE	AIAE	

→ DECREASING TORQUE →

FIG - 11

COLUMN 0 COLUMN 3

↓ DECREASING TORQUE ↑

V2	0	0	0	0	ROW 3
12-STROKE	0	0	0	0	
V4	1	1	0	0	
V8	1	1	1	1	ROW 0
	DIDE	DIAE	AIDE	AIAE	

→ DECREASING TORQUE →

FIG - 12

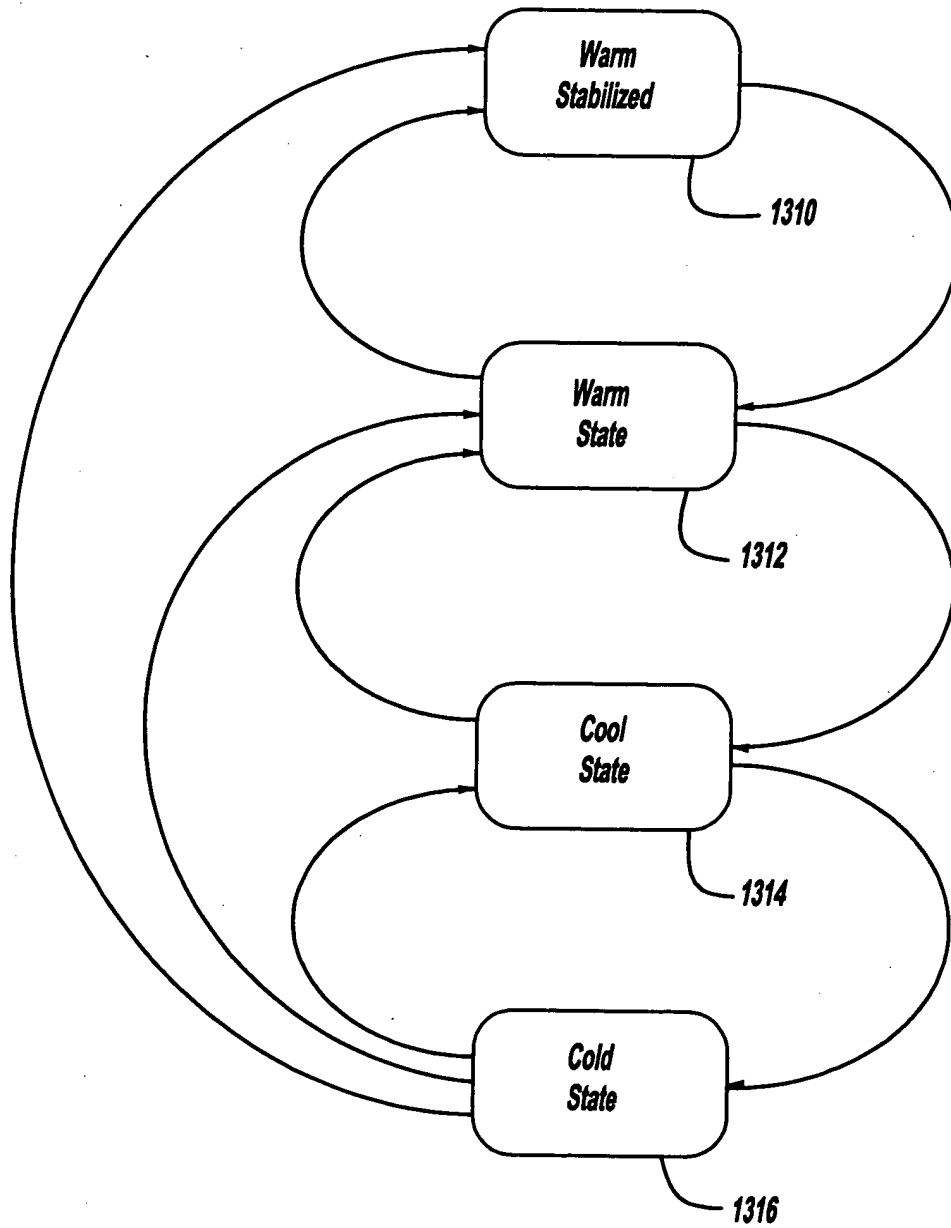


FIG - 13

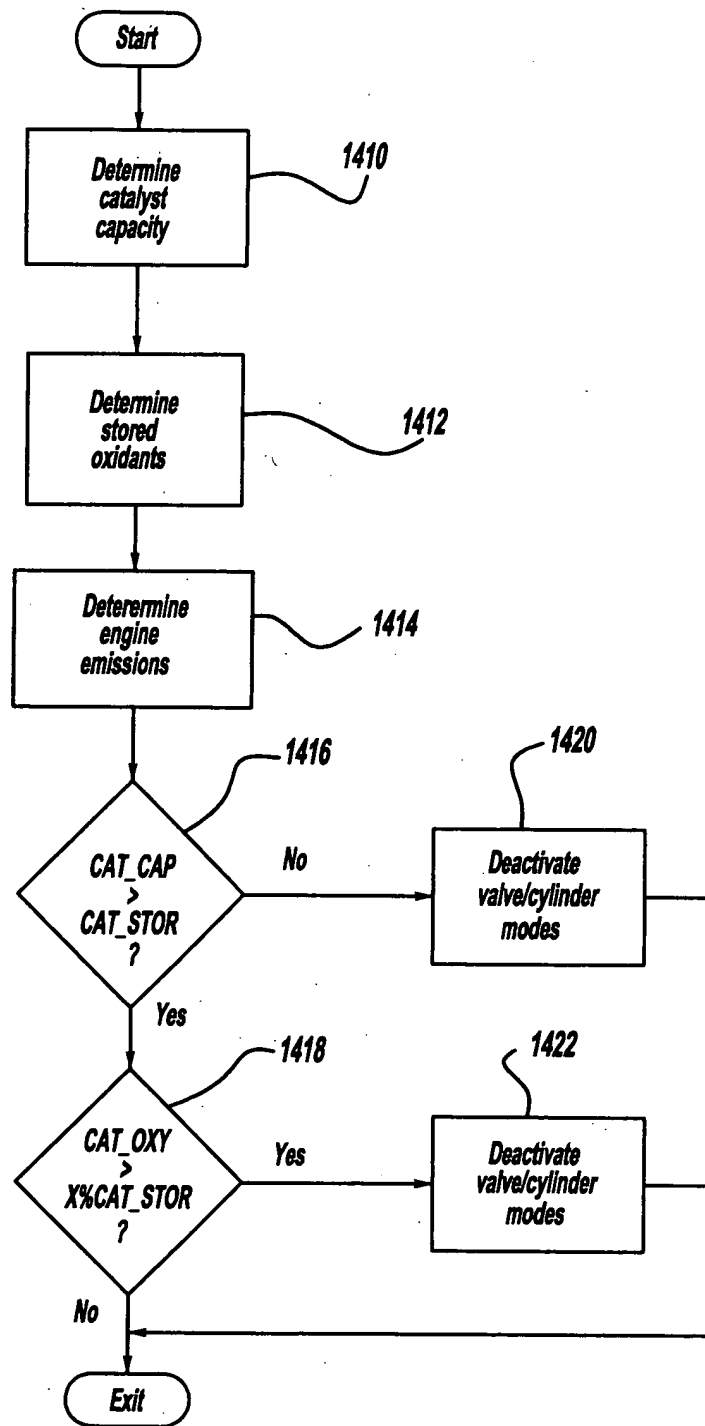
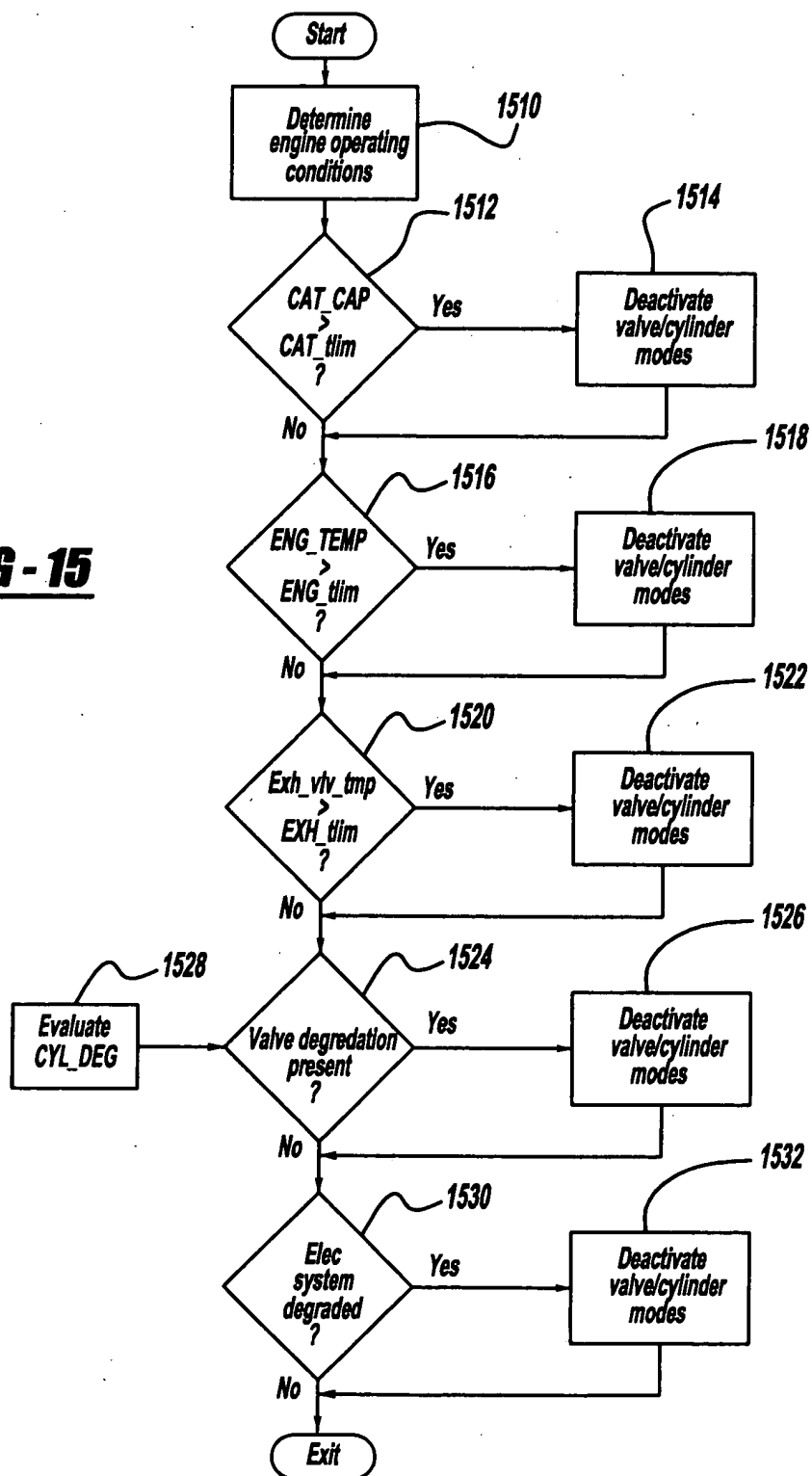
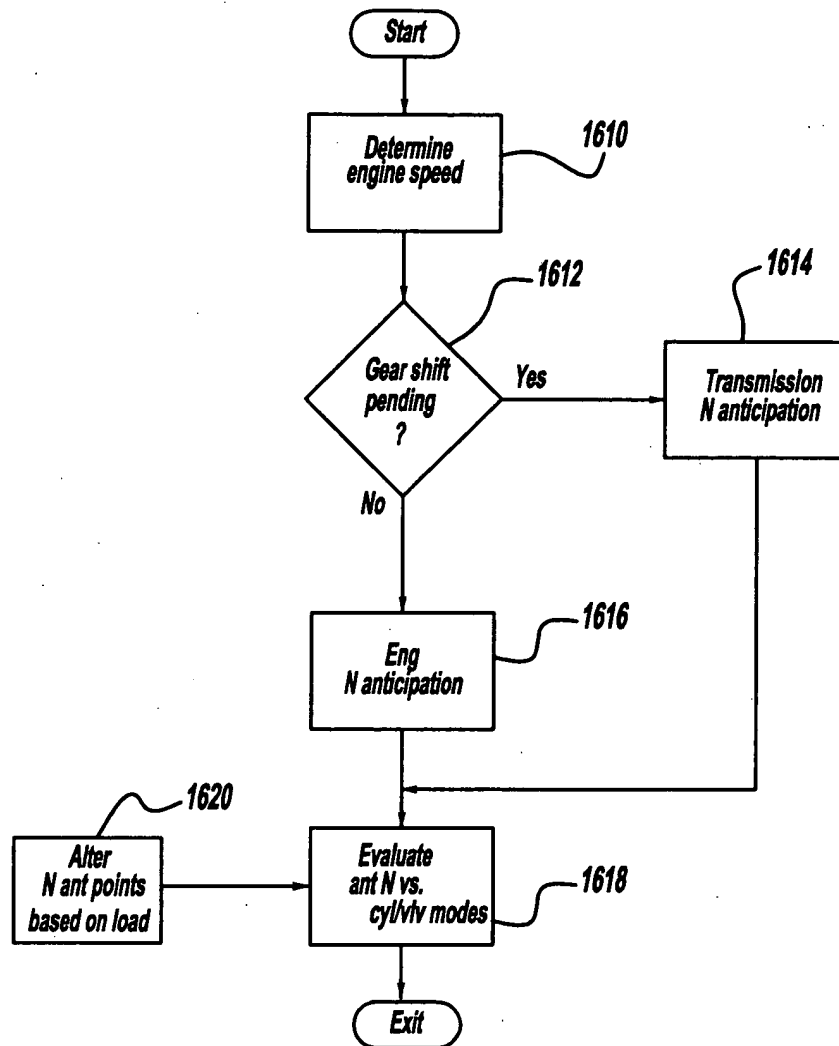
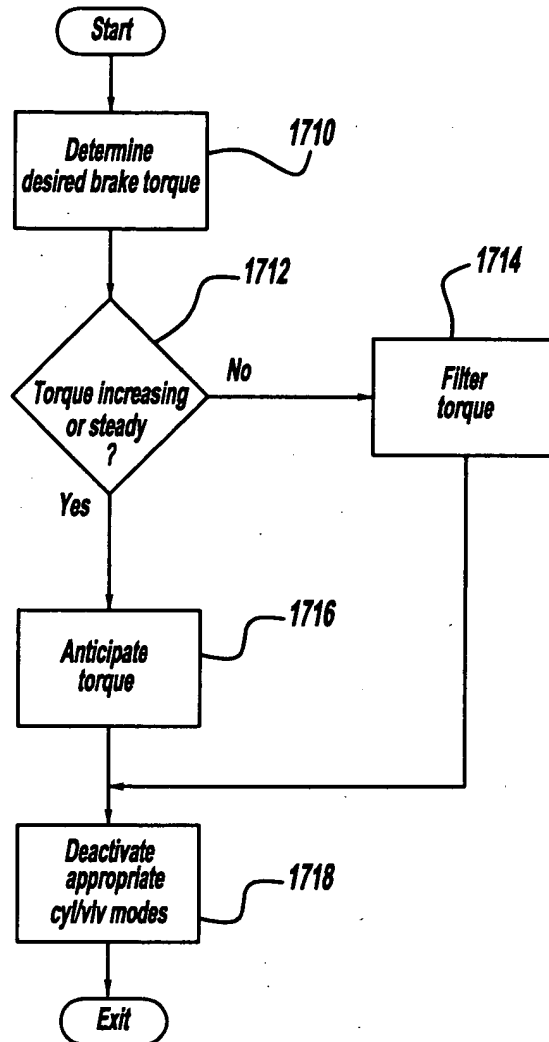
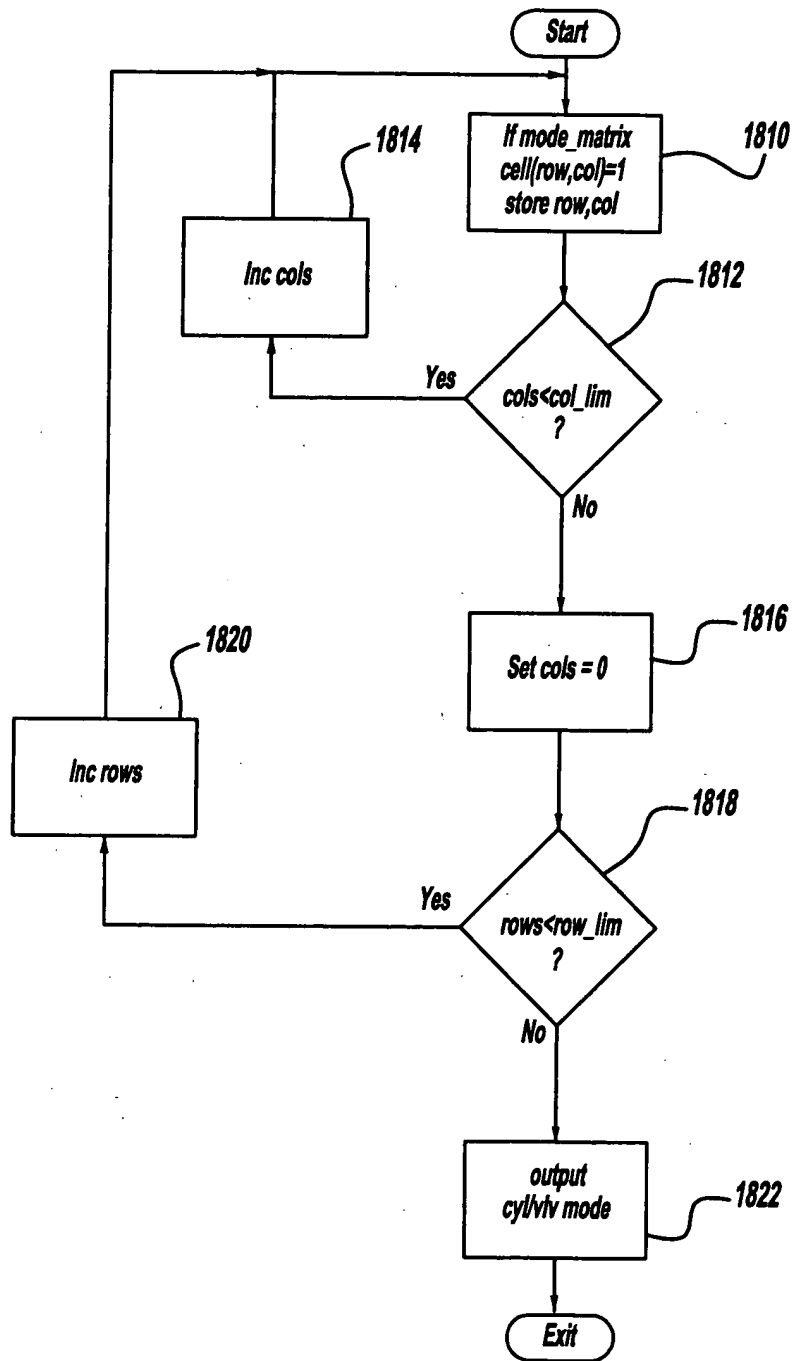
FIG - 14

FIG - 15

**FIG - 16**

**FIG - 17**

**FIG - 18**

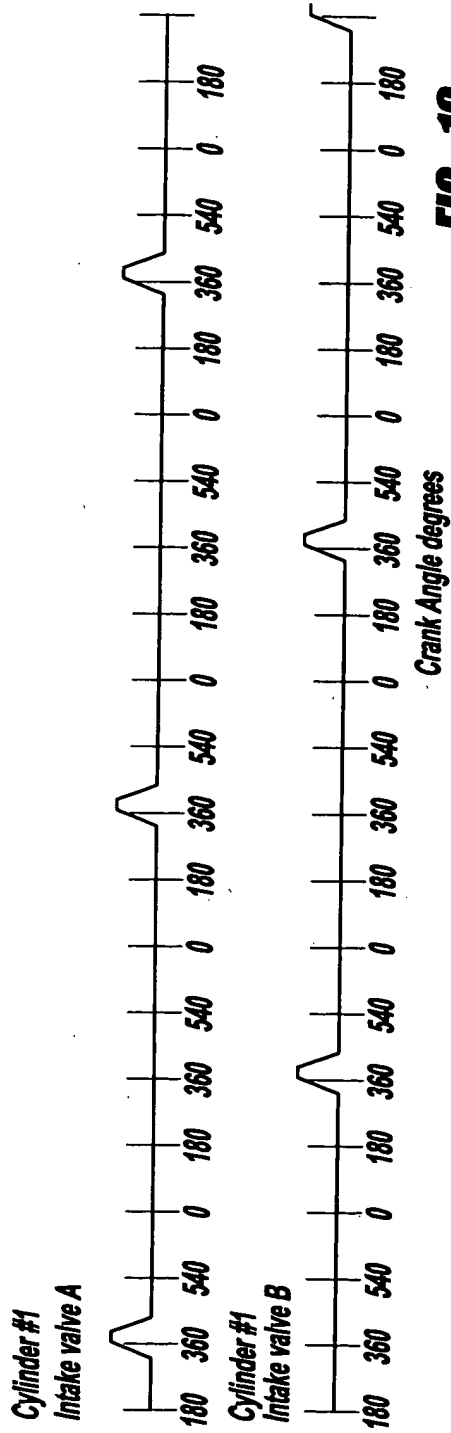


FIG - 19

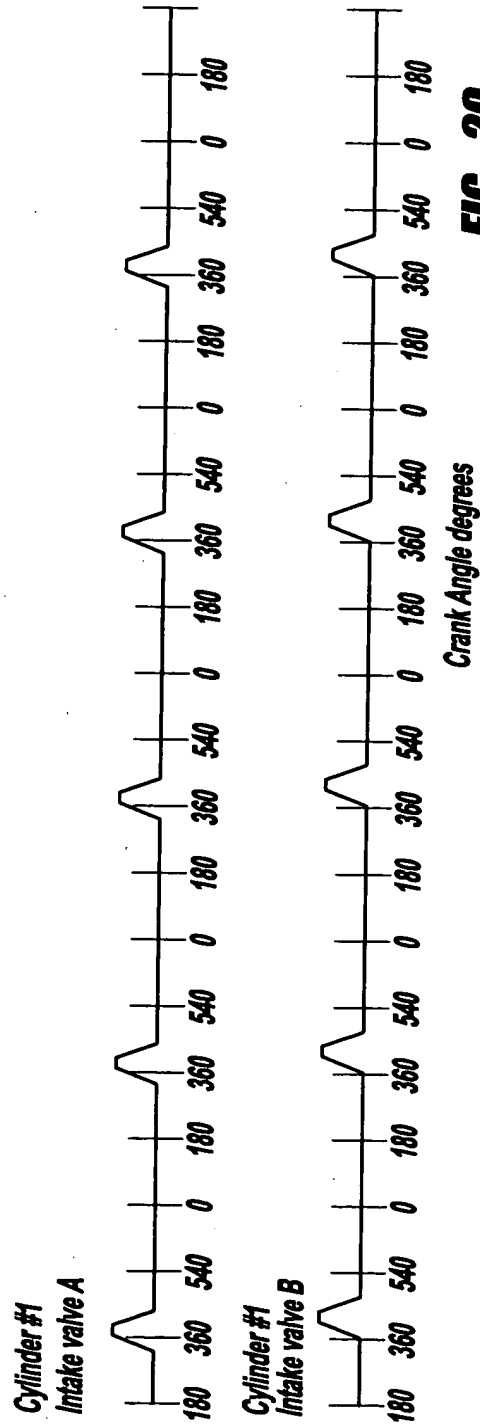


FIG - 20

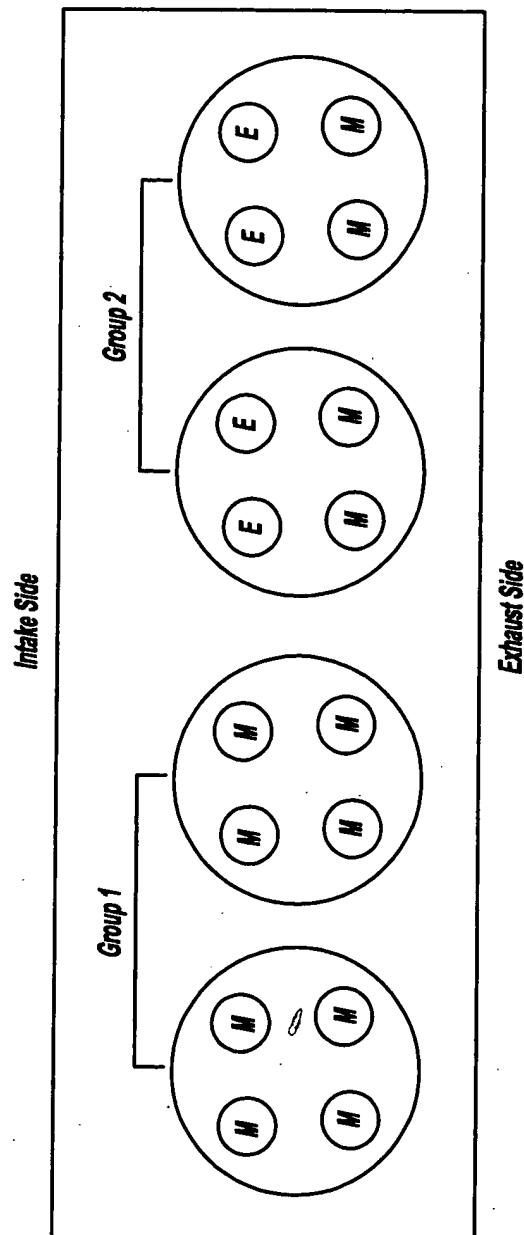


FIG - 21

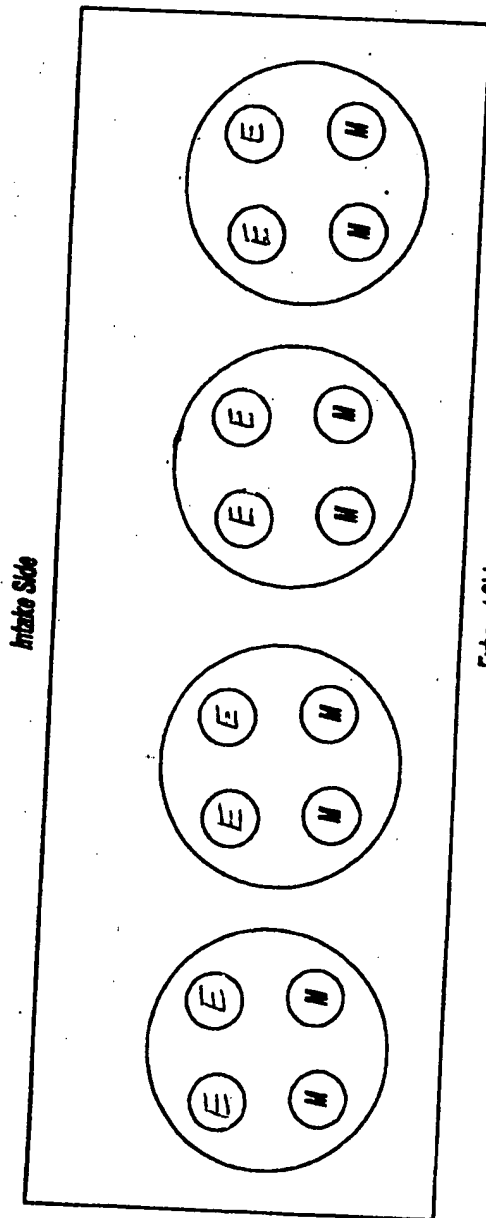


FIG - 21A

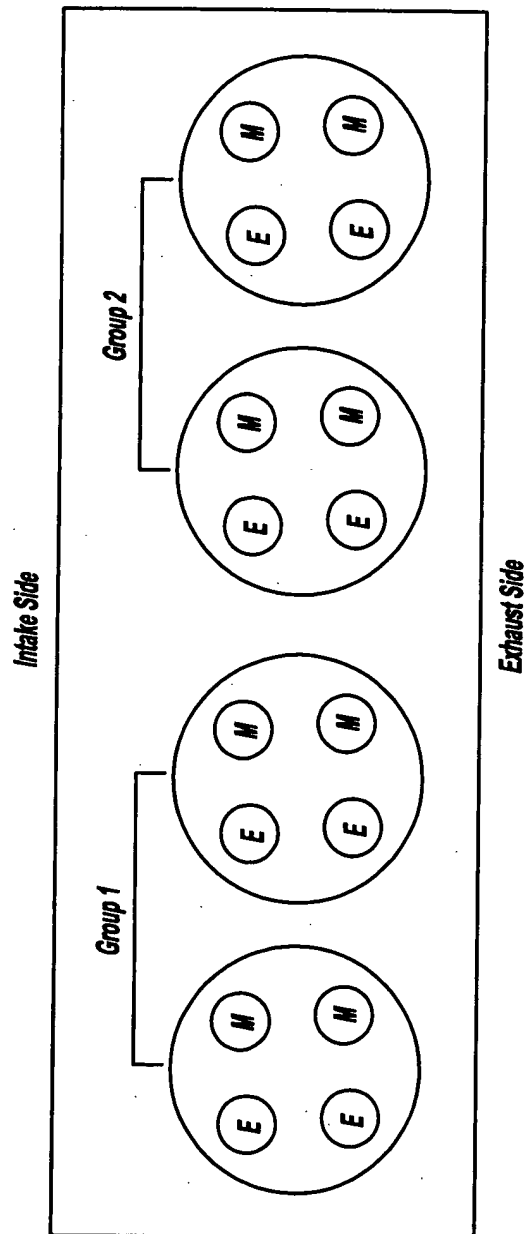


FIG - 22

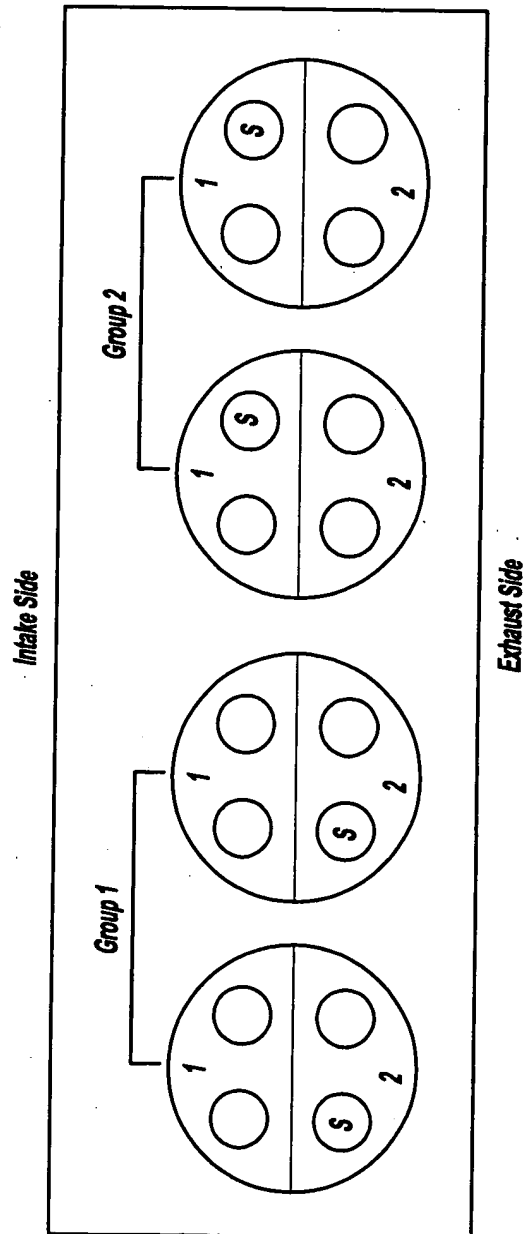


FIG - 23

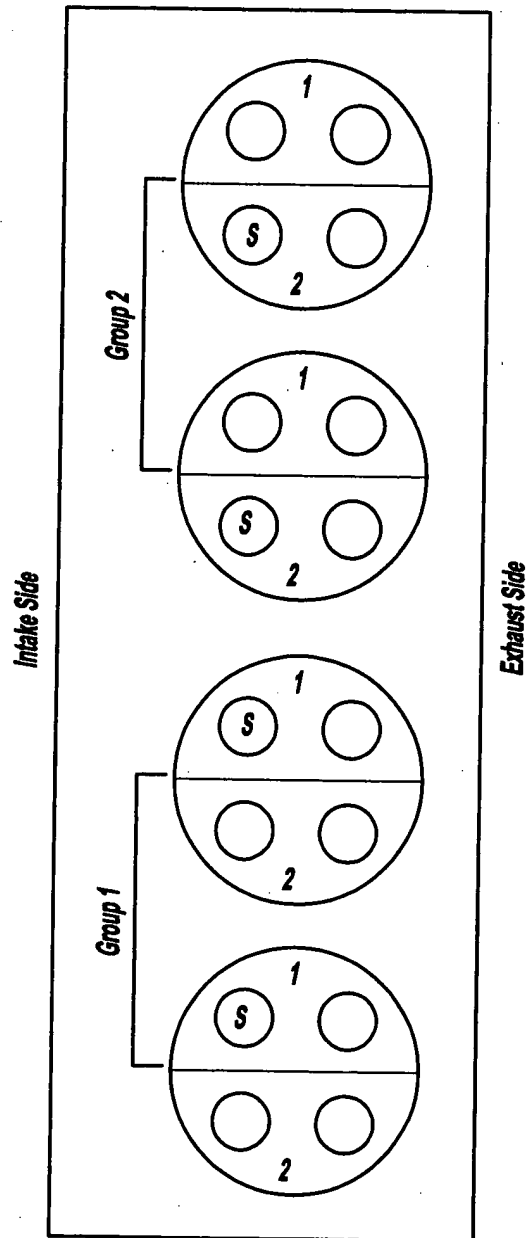


FIG - 24

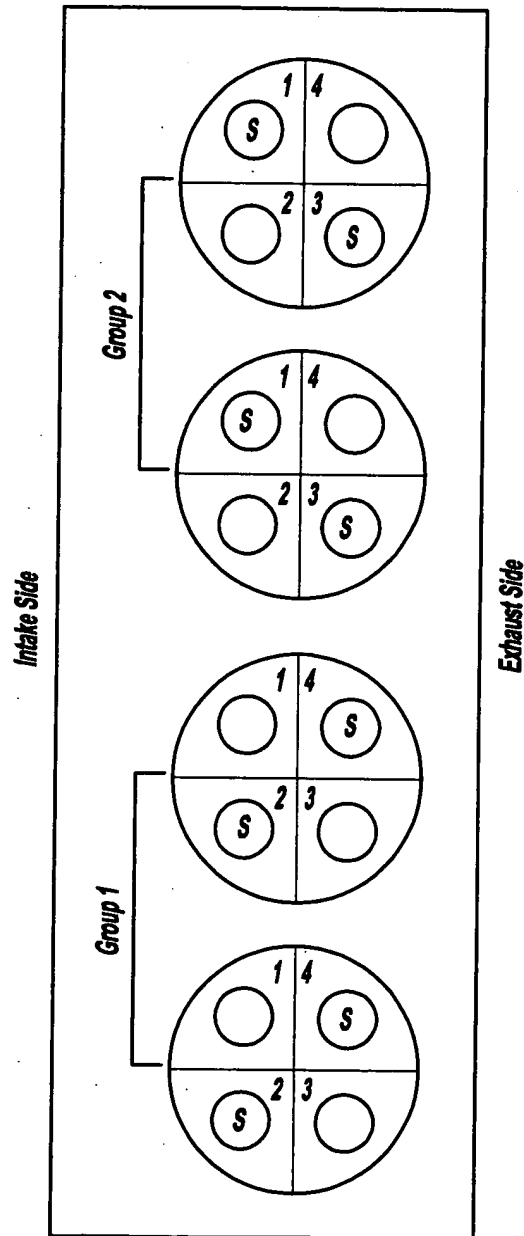


FIG - 25

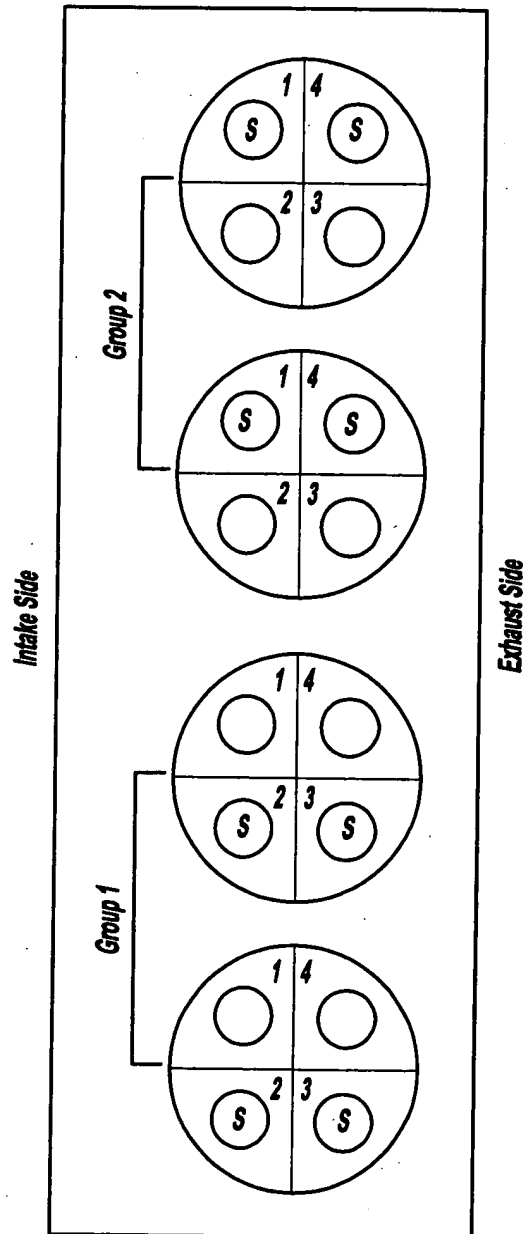


FIG - 26

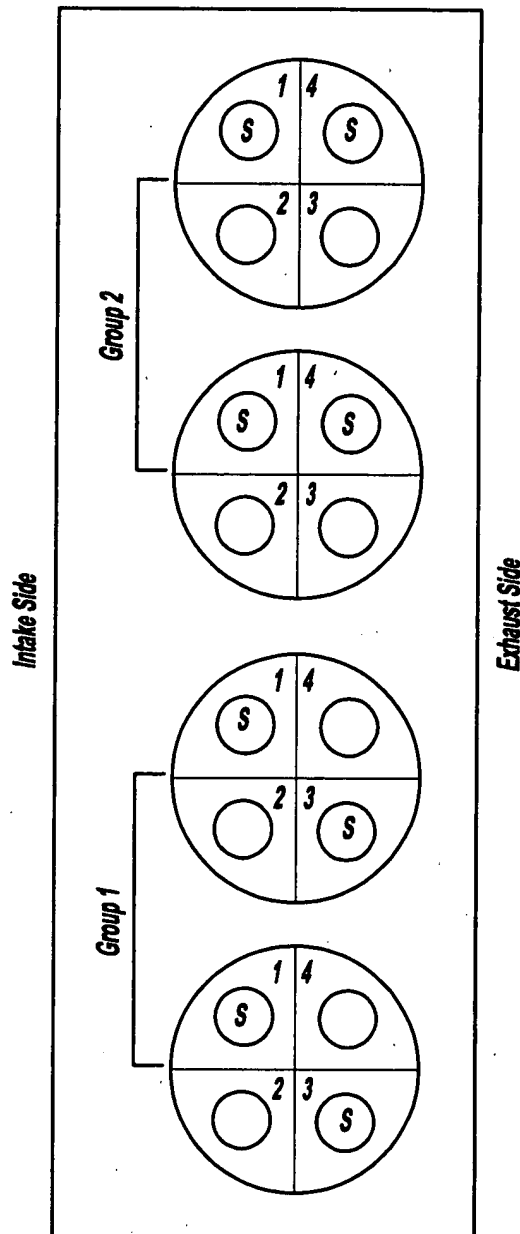
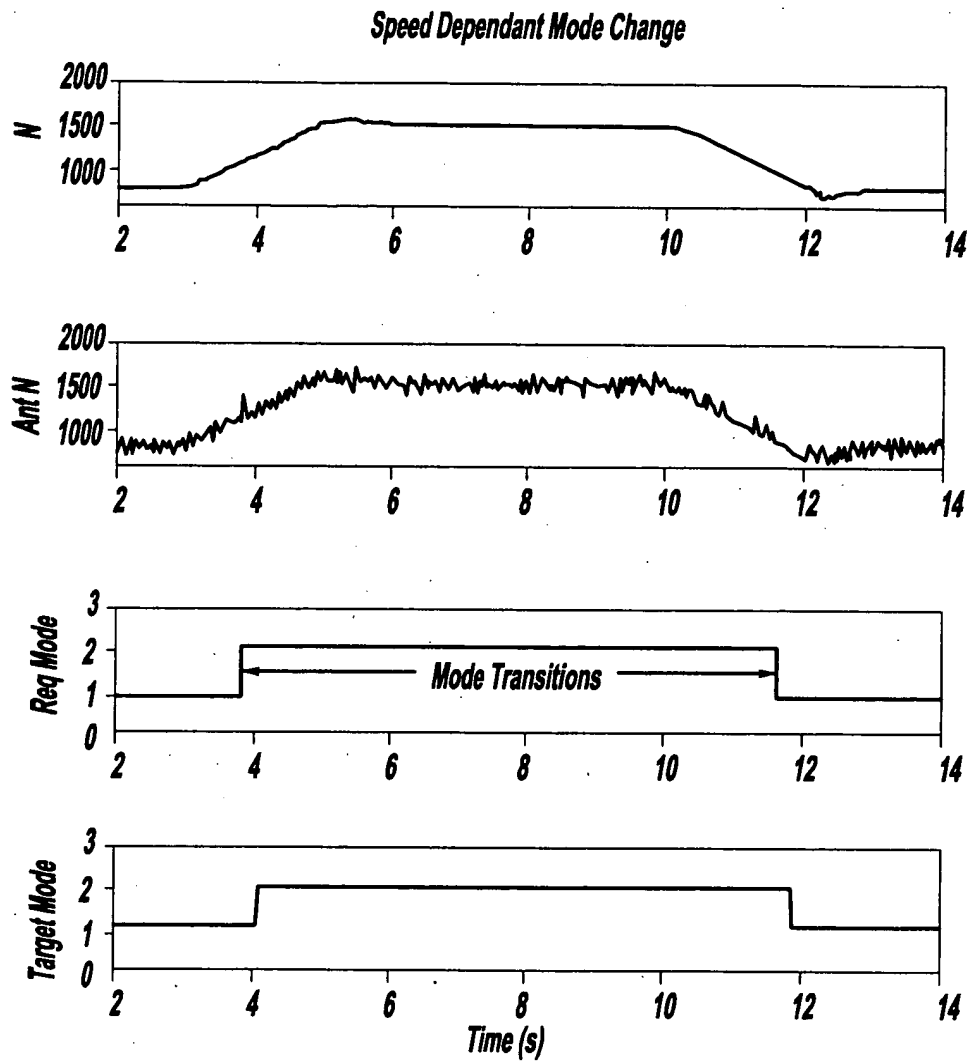


FIG - 27

**FIG - 28**

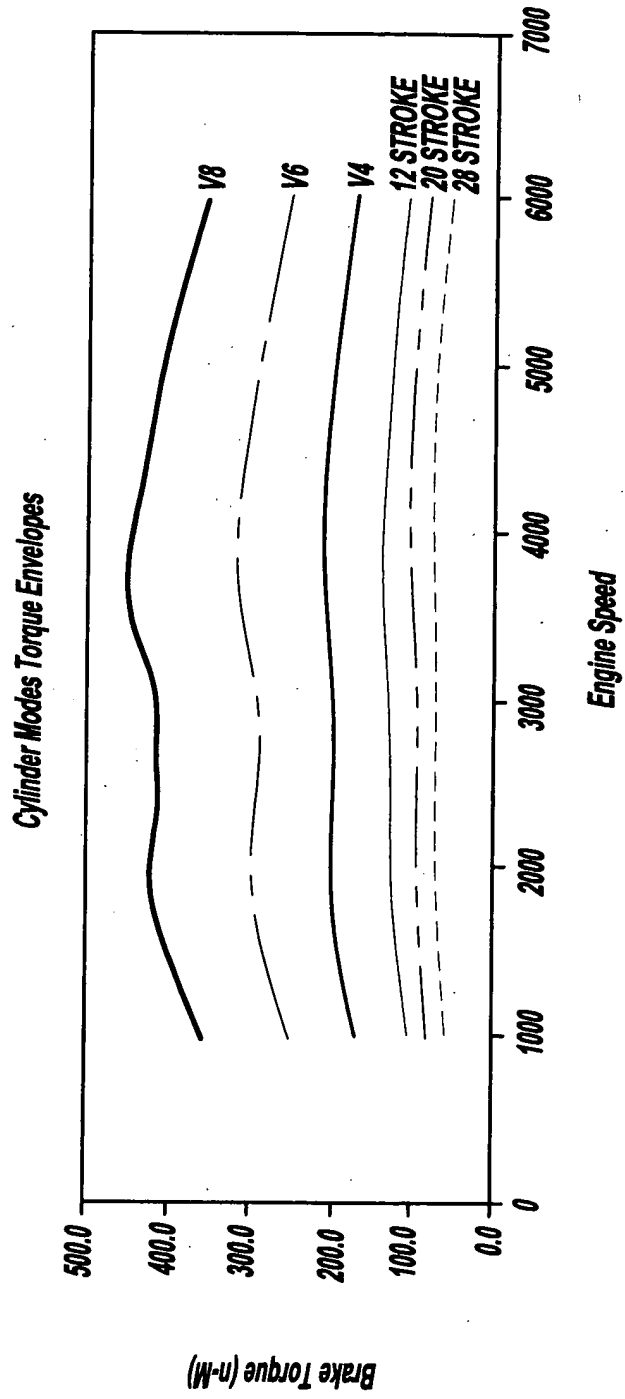


FIG - 29

27/60

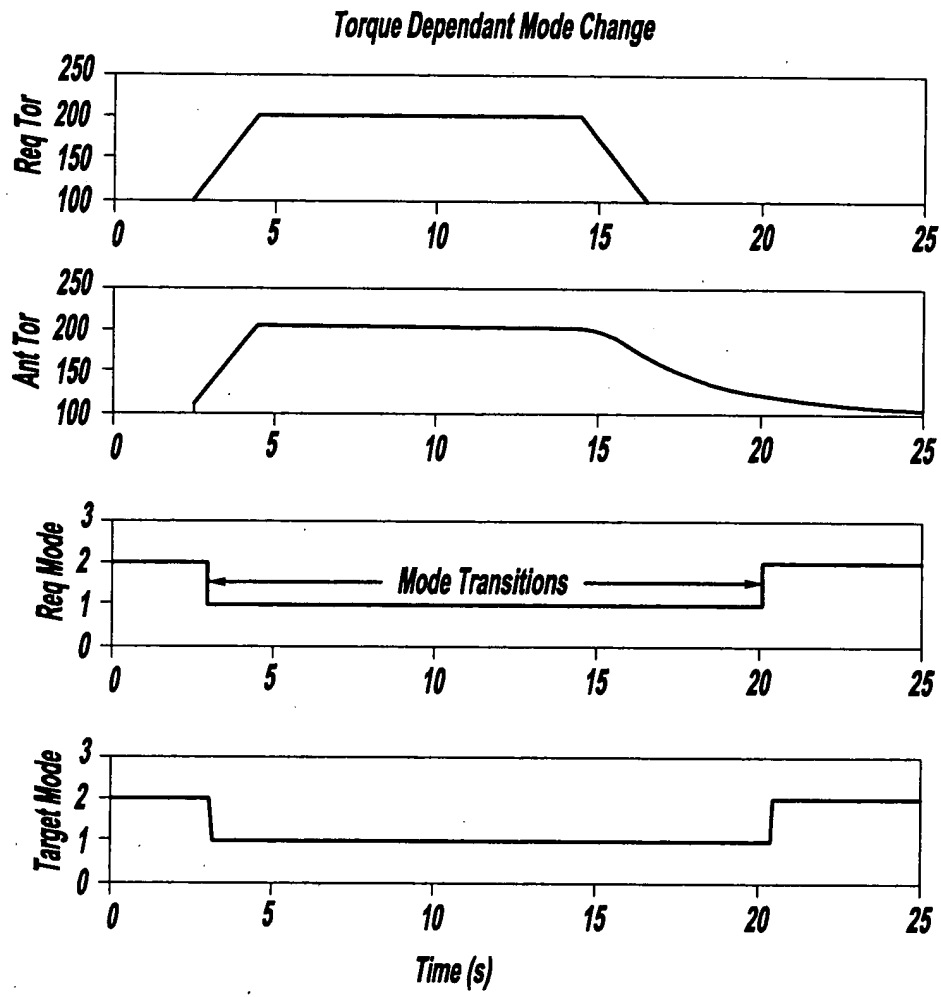
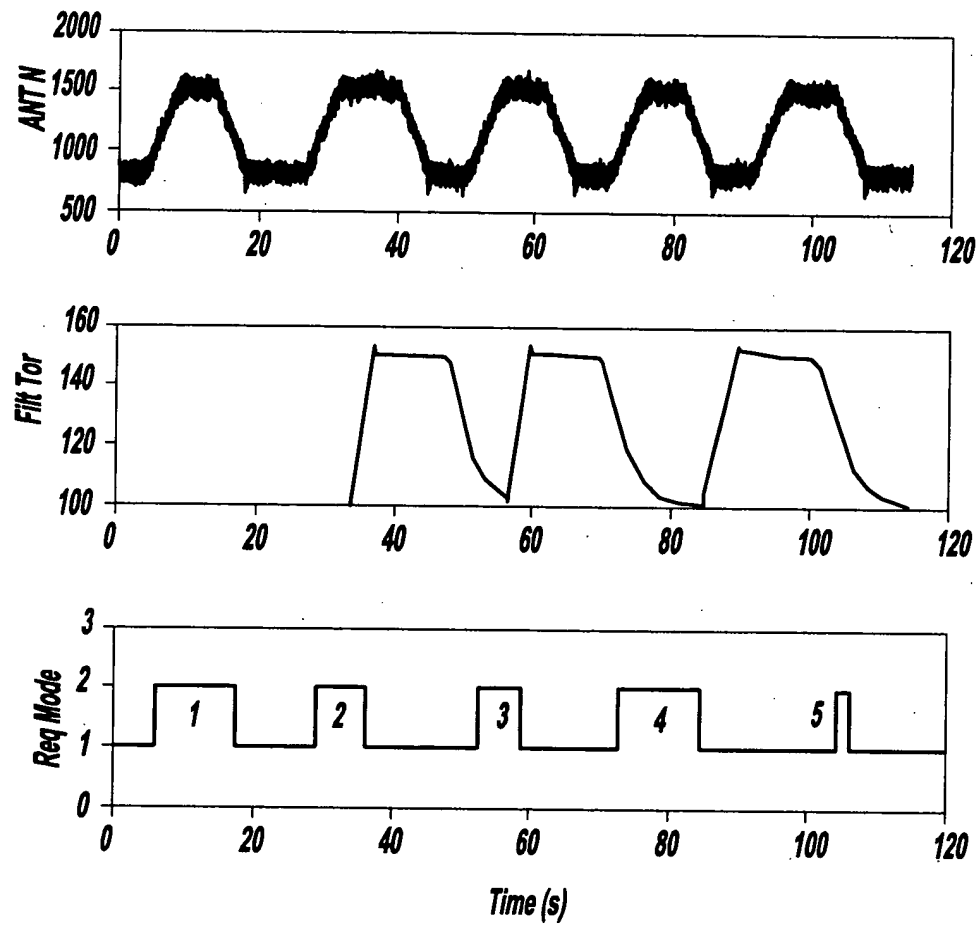
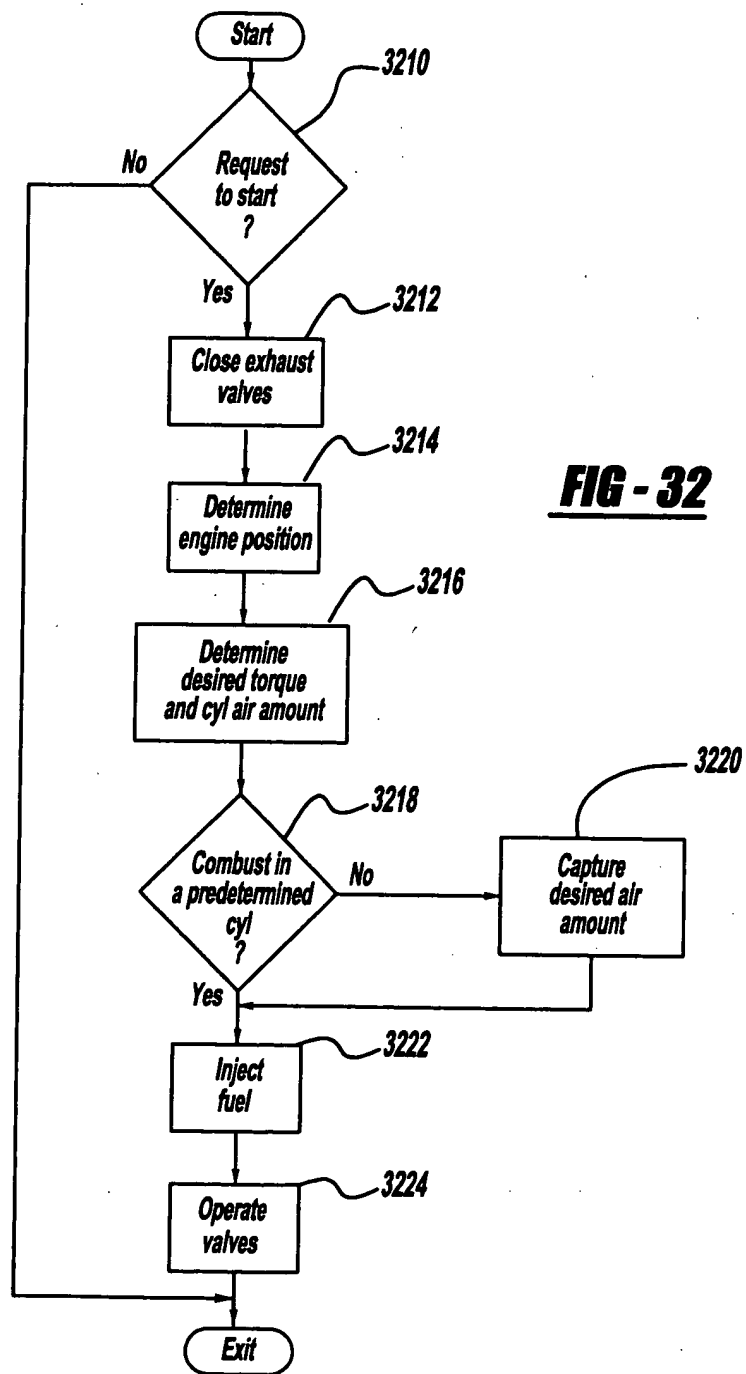


FIG - 30

Speed and Torque Dependant Mode Changes**FIG - 31**



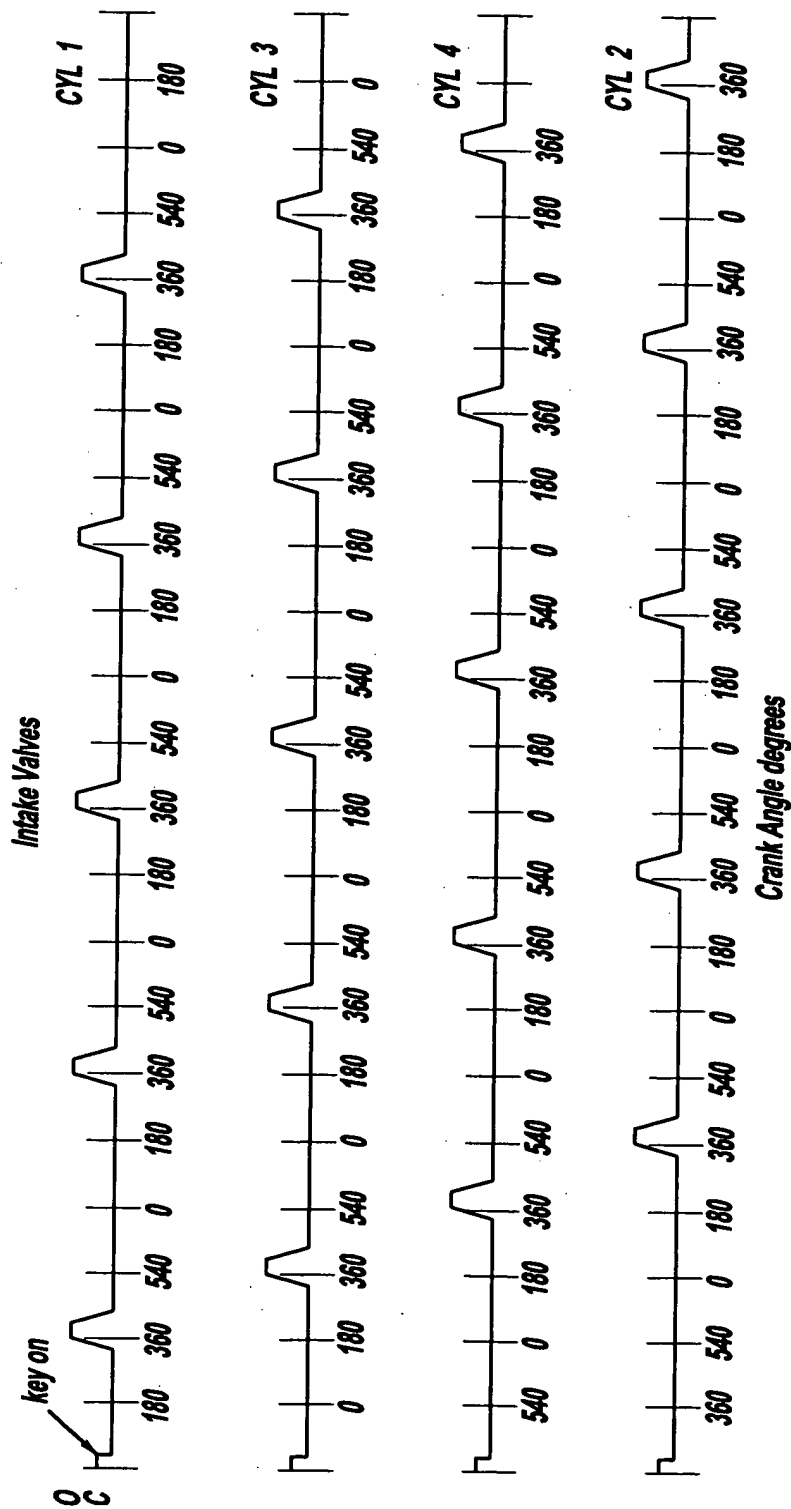
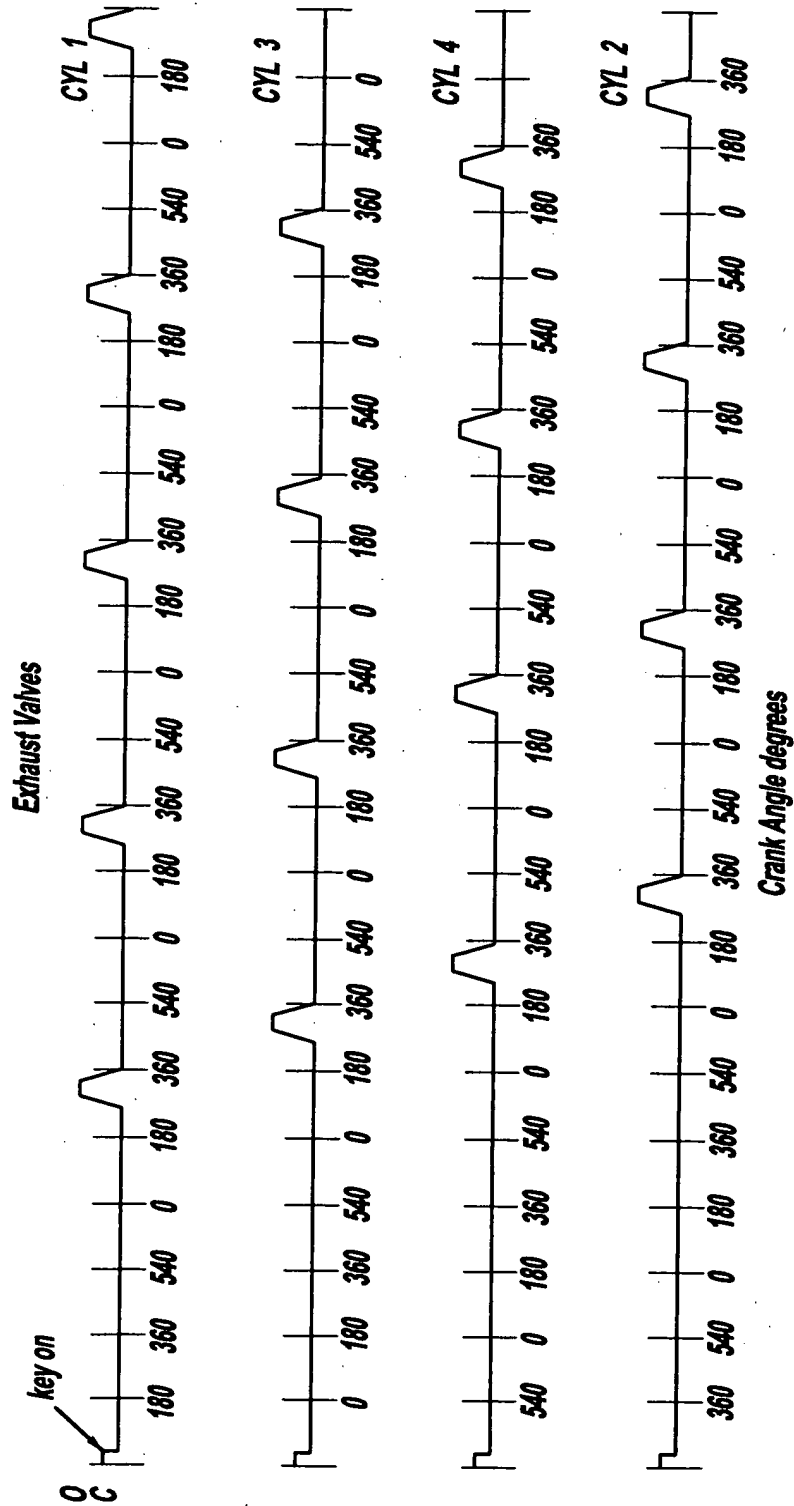


FIG - 33a

**FIG - 33b**

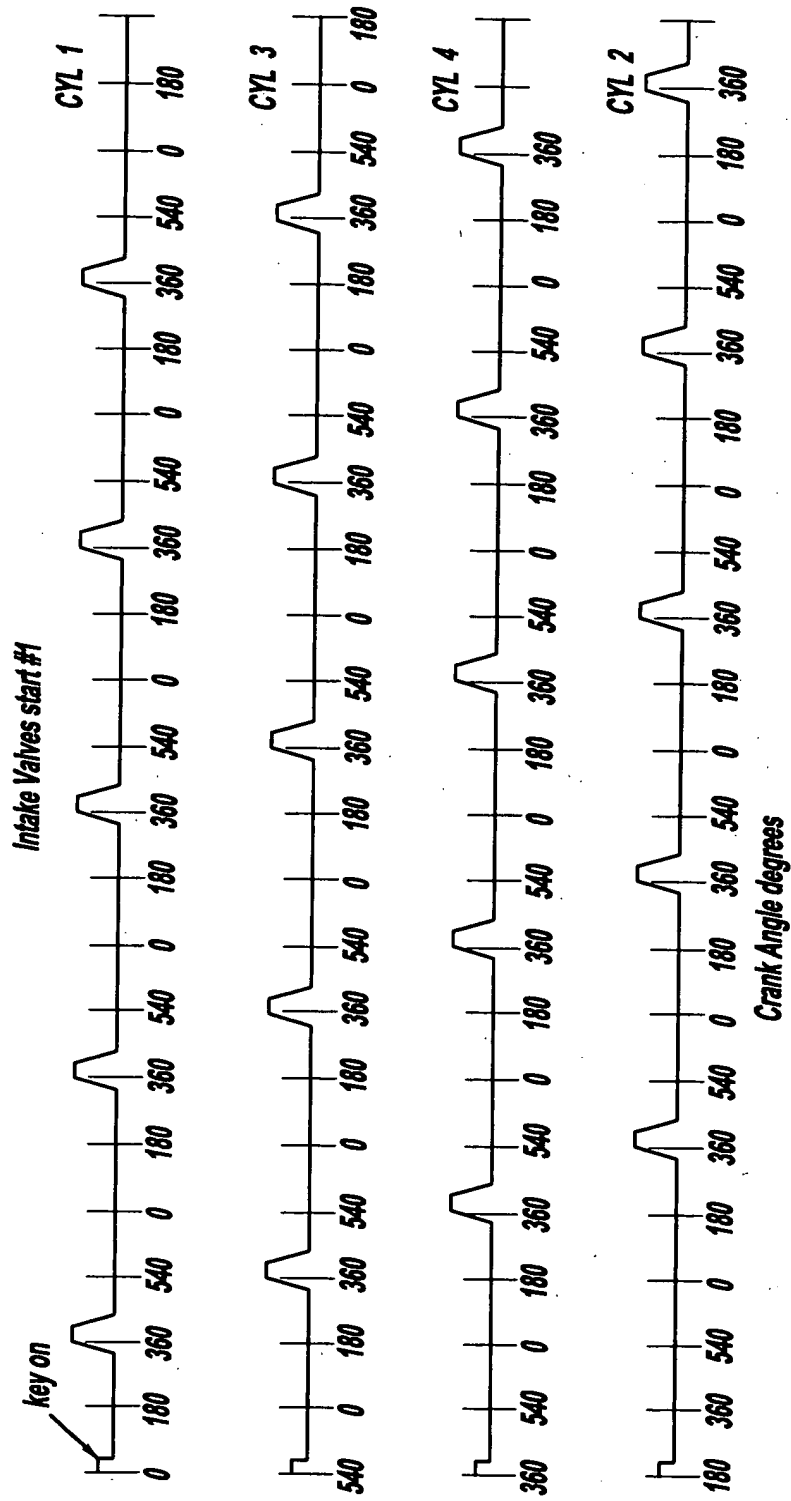


FIG - 34a

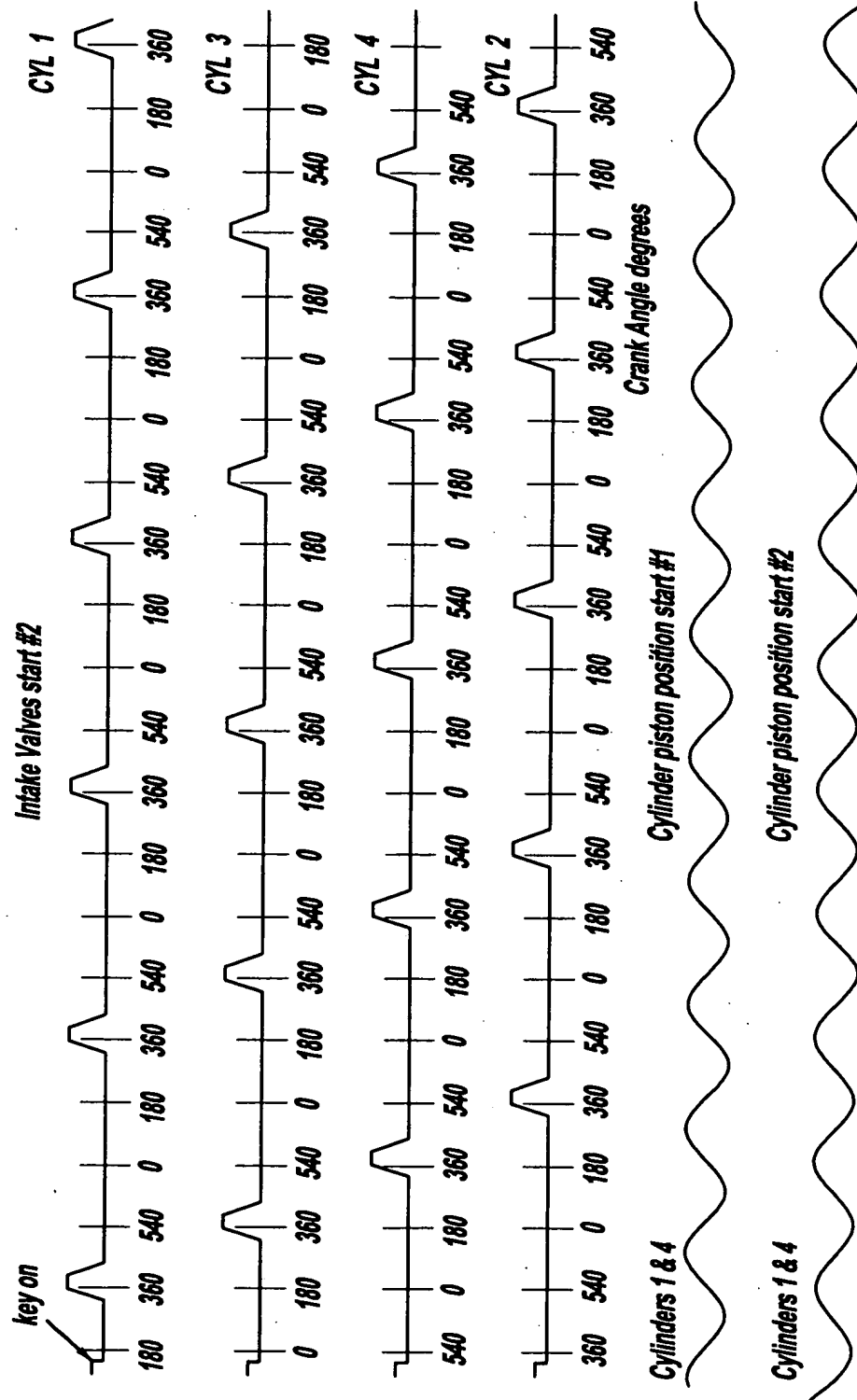


FIG - 34b

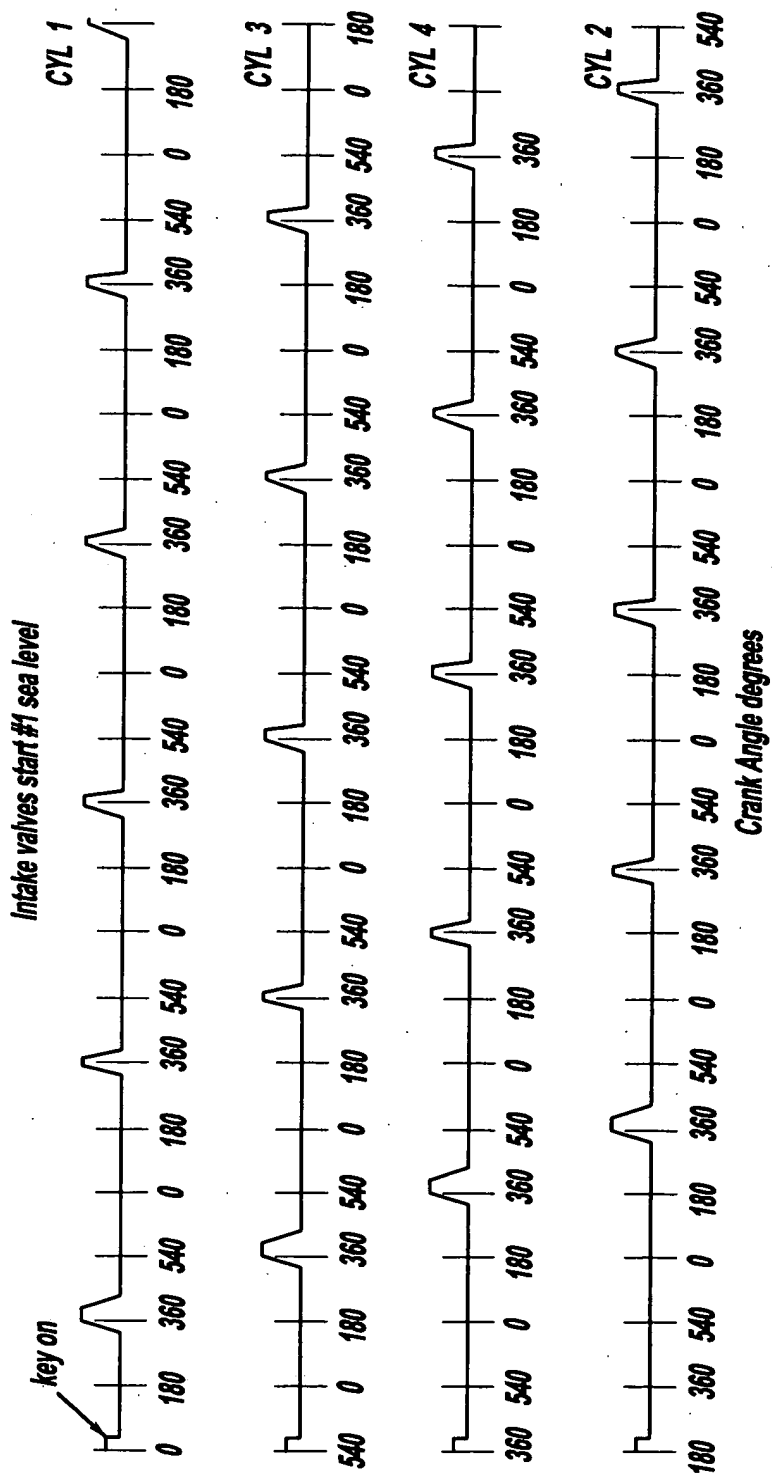


FIG - 35a

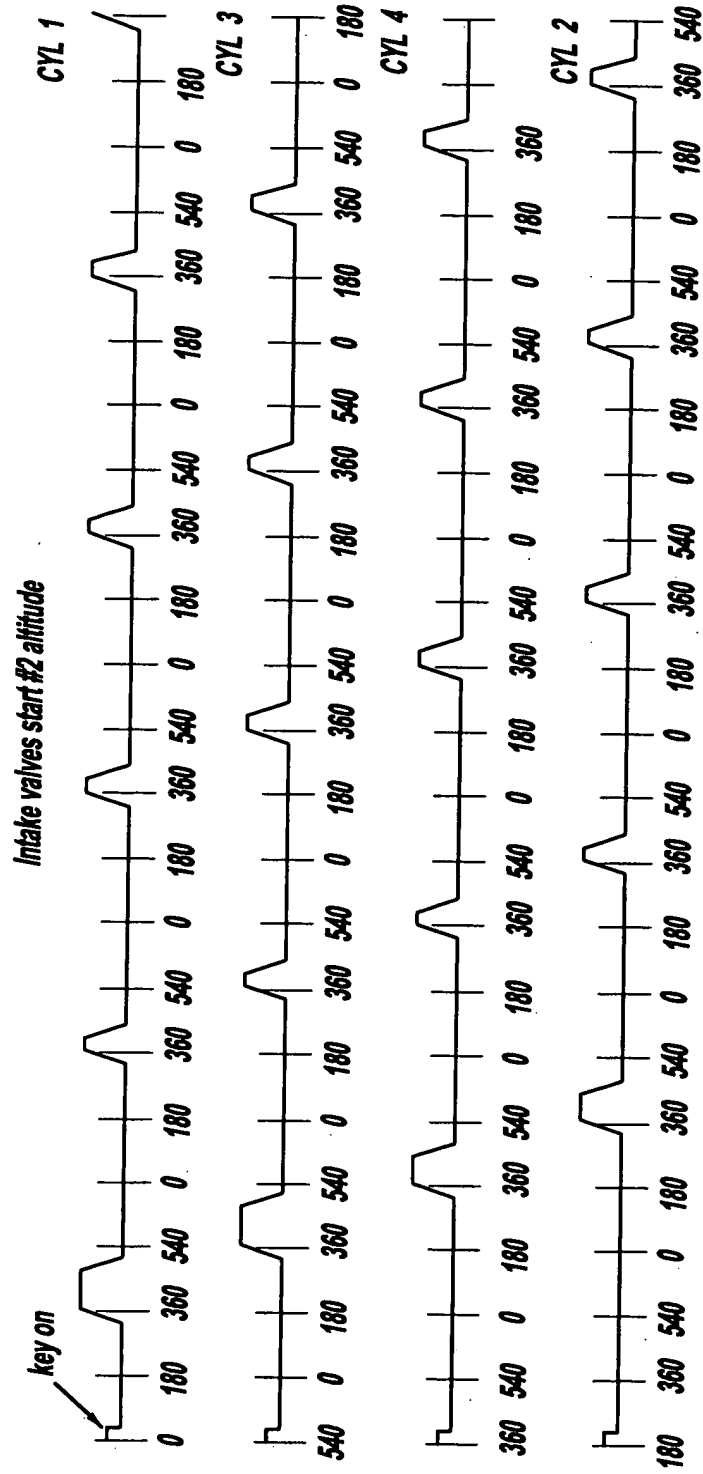
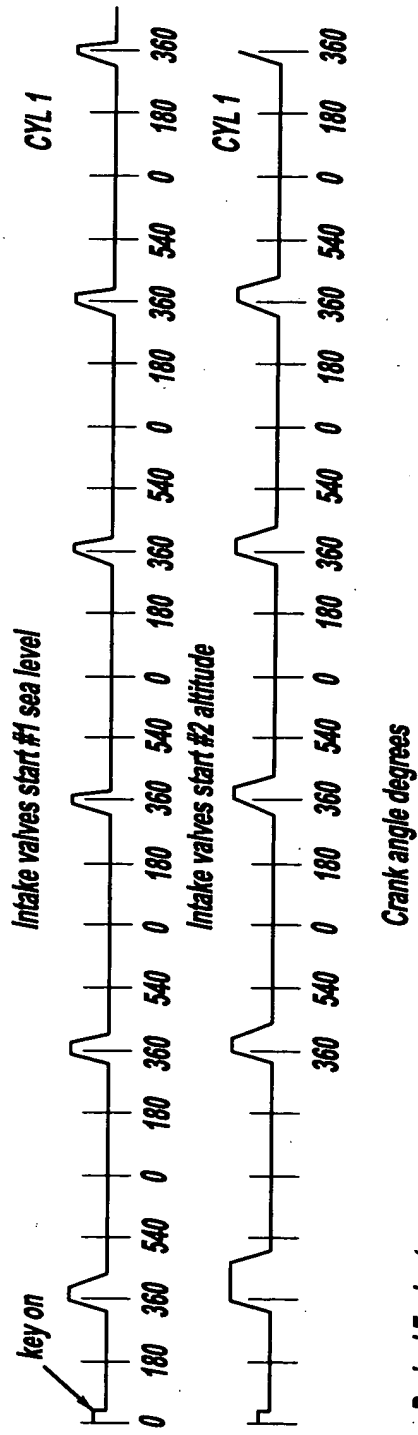


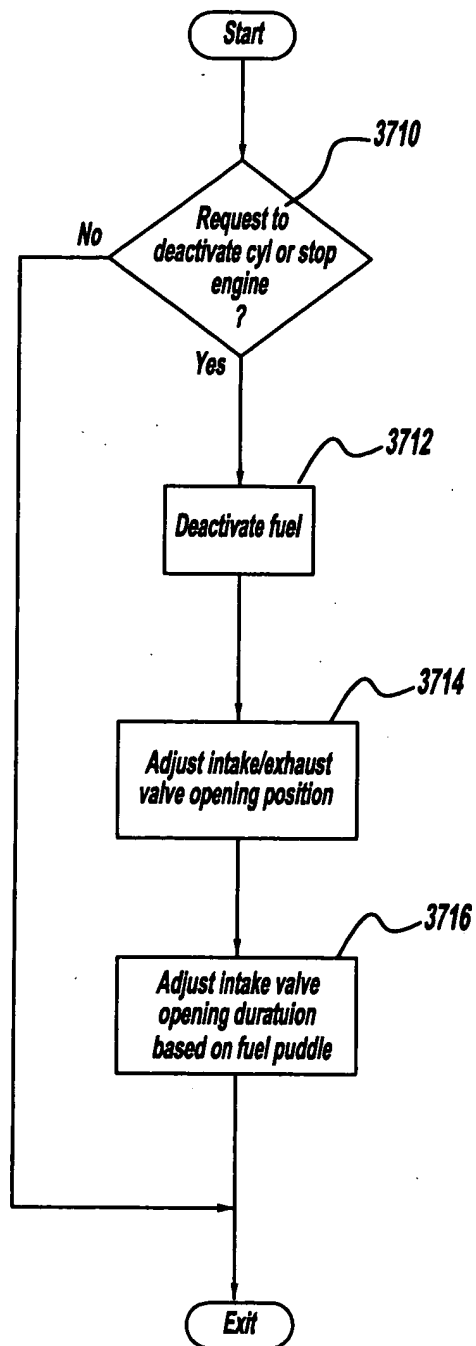
FIG - 35b



Desired Engine torque

Engine Speed

FIG - 36

**FIG - 37**



Fuel puddle adjustment

CYL 1

CYL 3

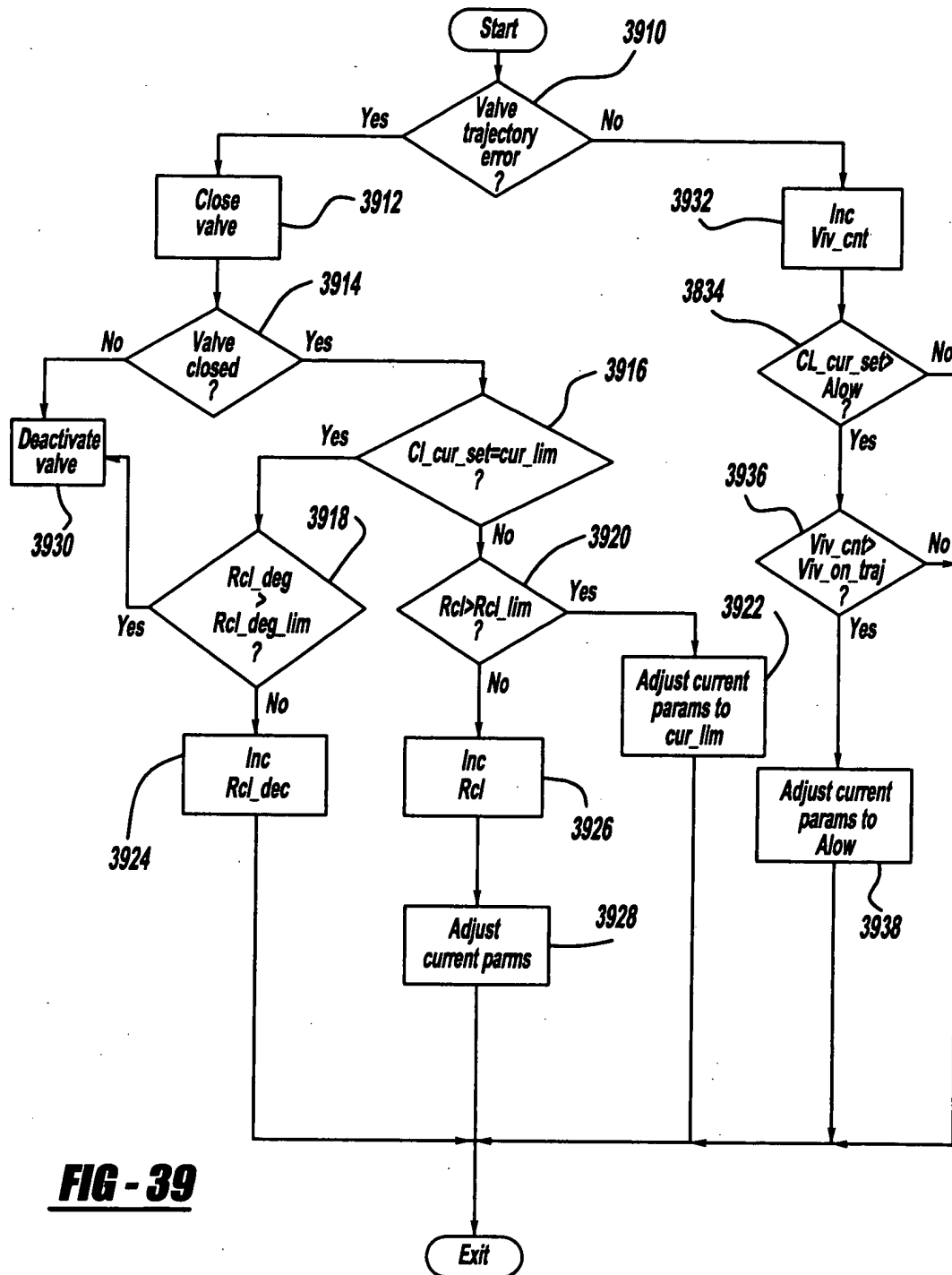
CYL 4

CYL 2

Crank Angle degrees

Shut down request

FIG - 38



40/60

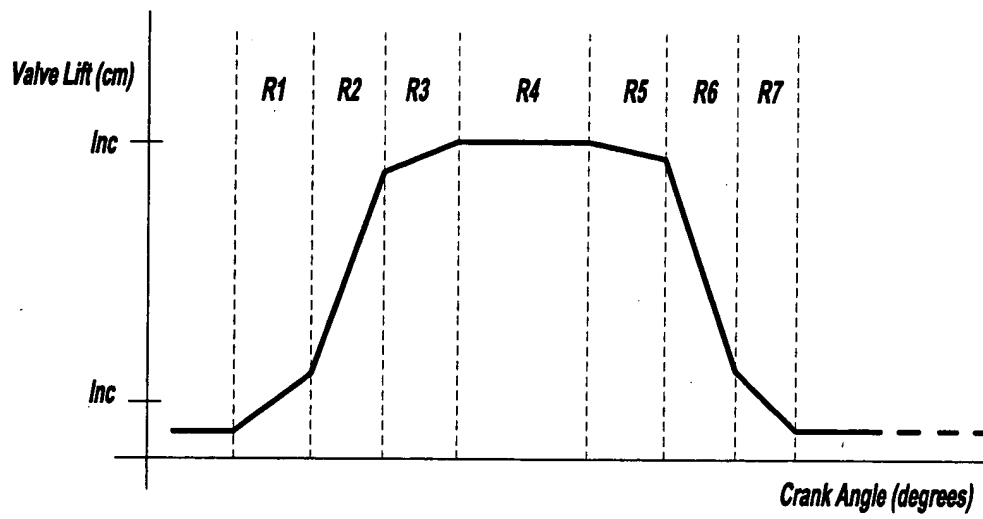
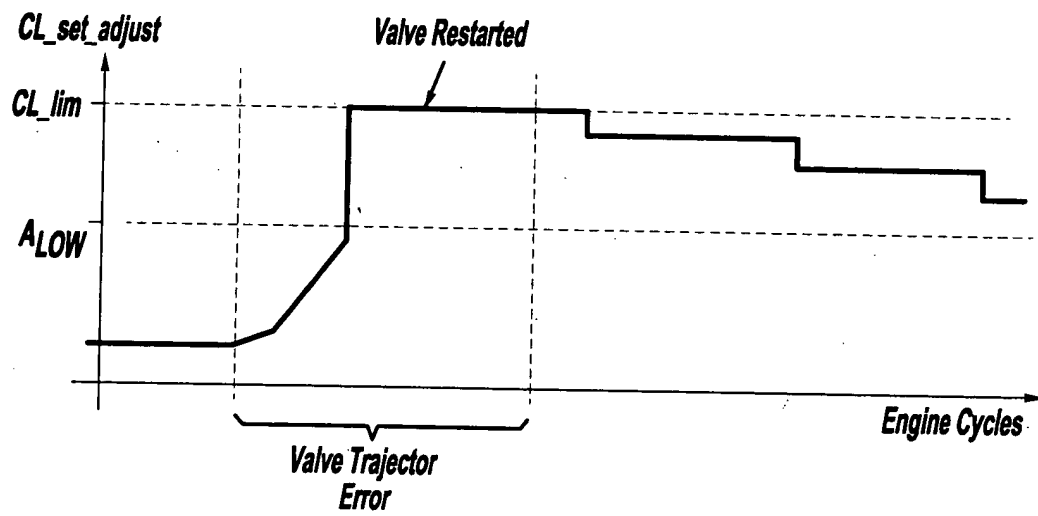
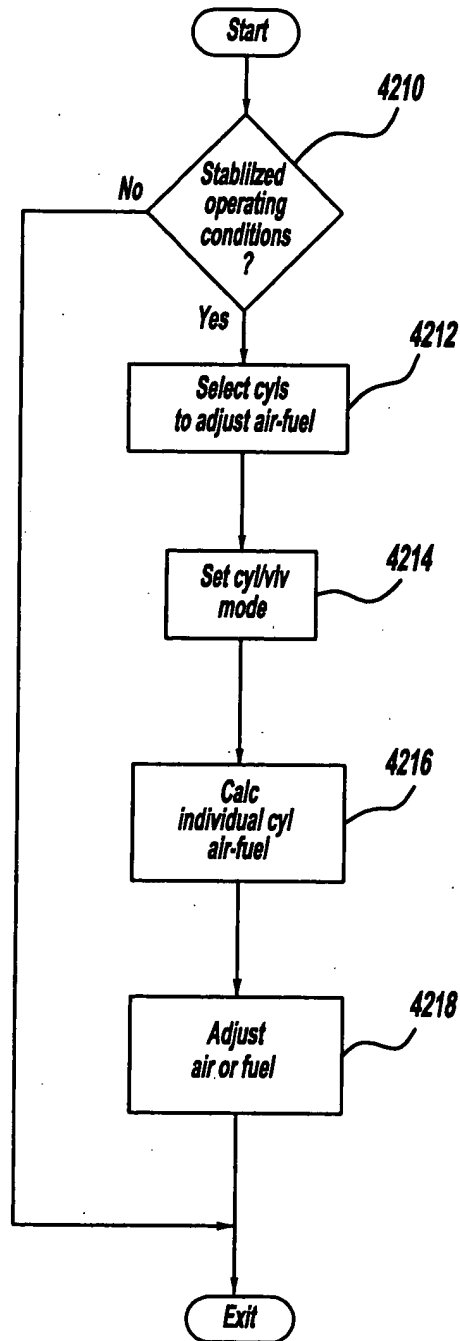


FIG - 40

**FIG - 41**

**FIG - 42**

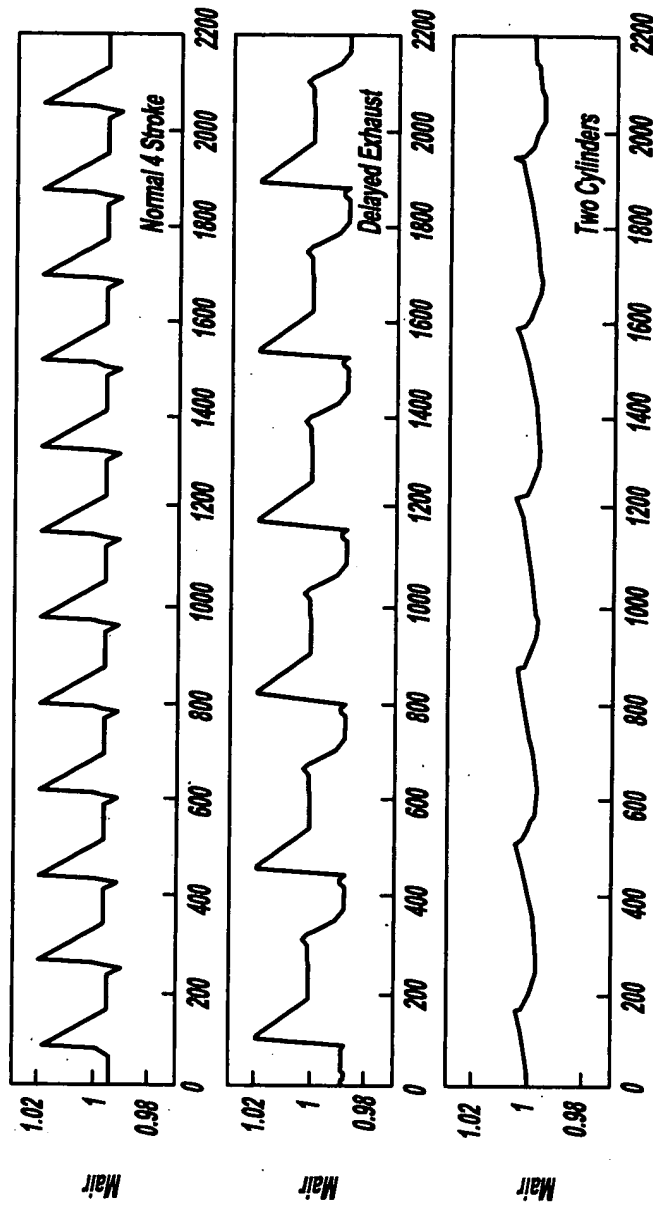


FIG - 43

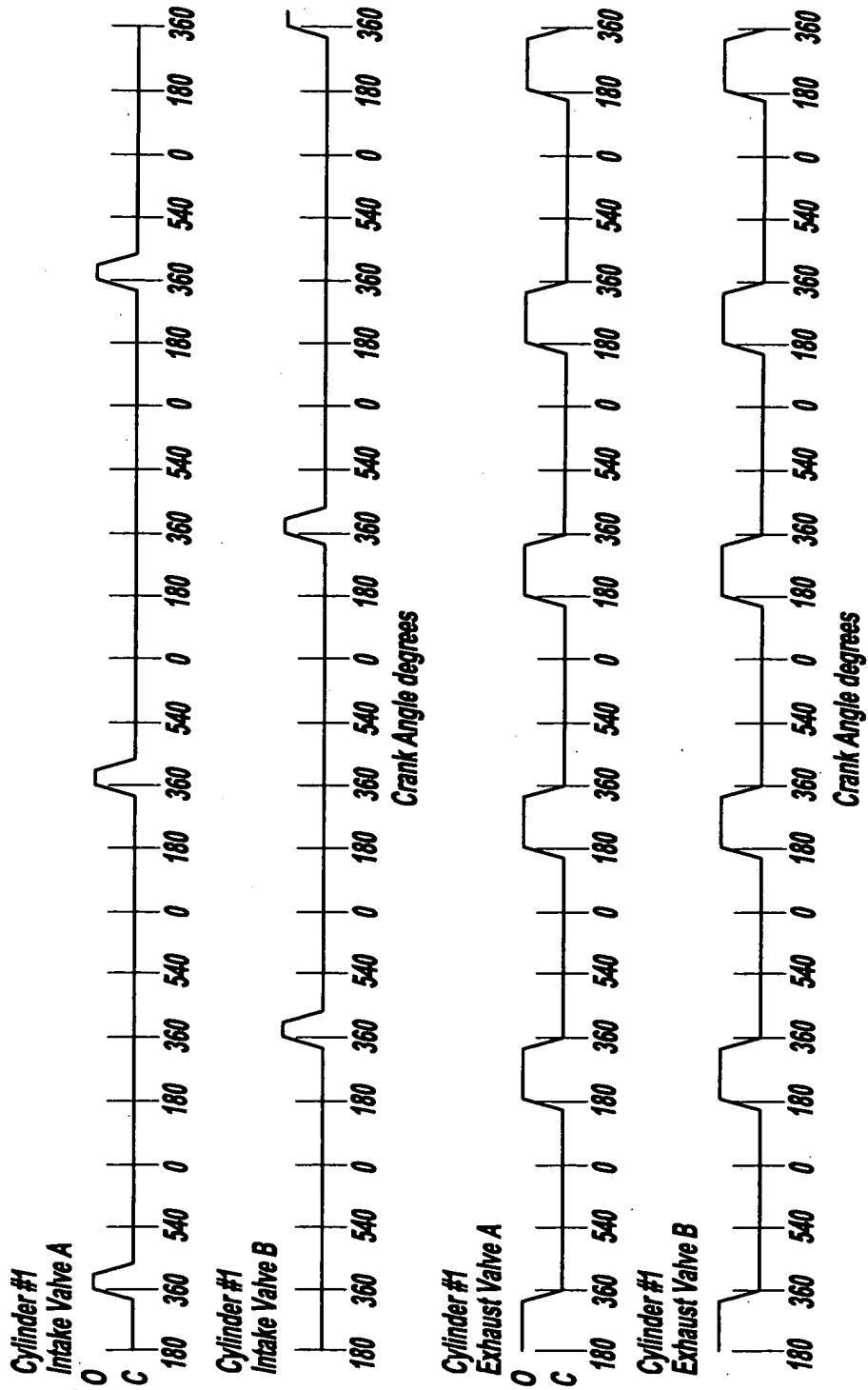


FIG - 44

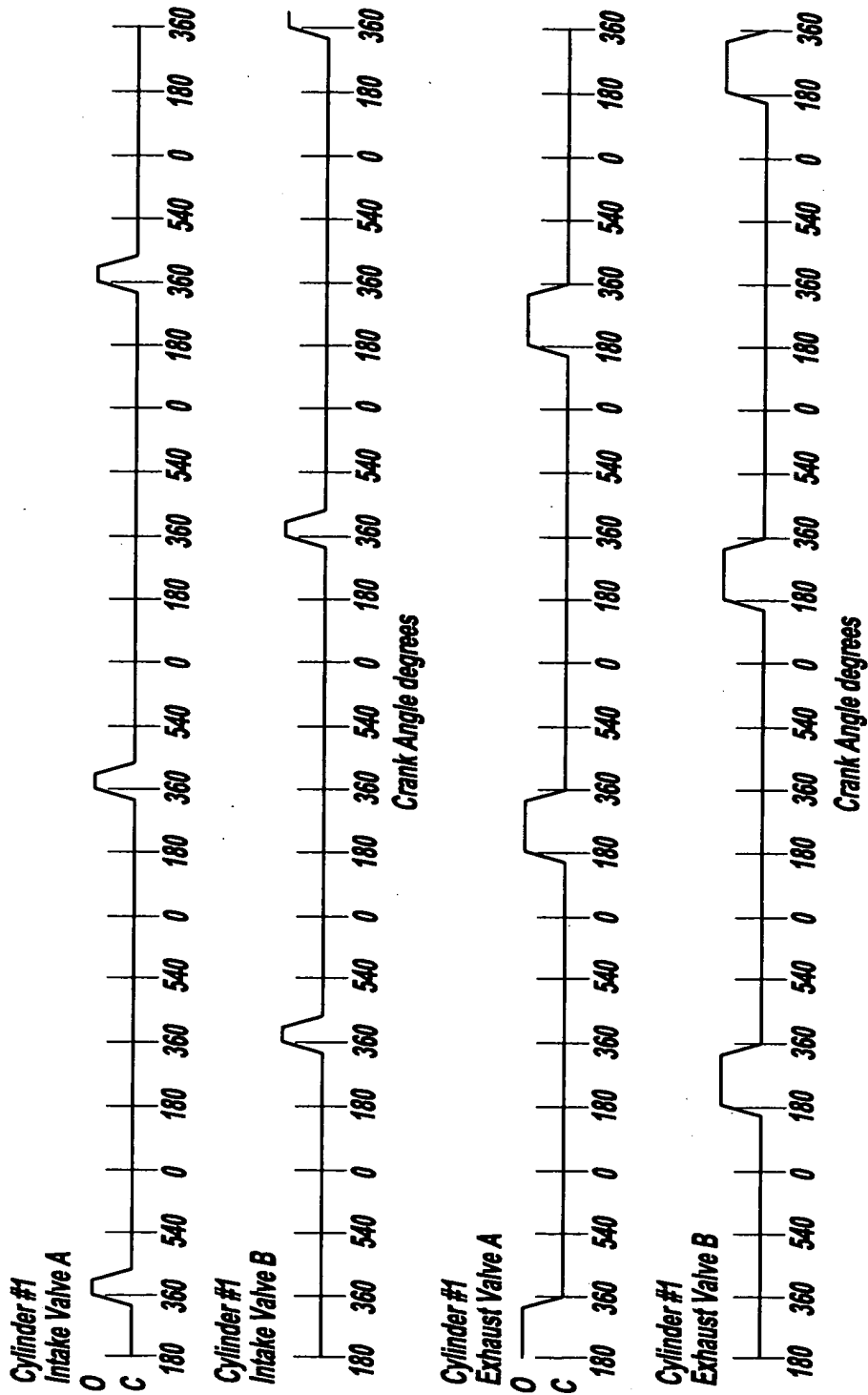


FIG - 45

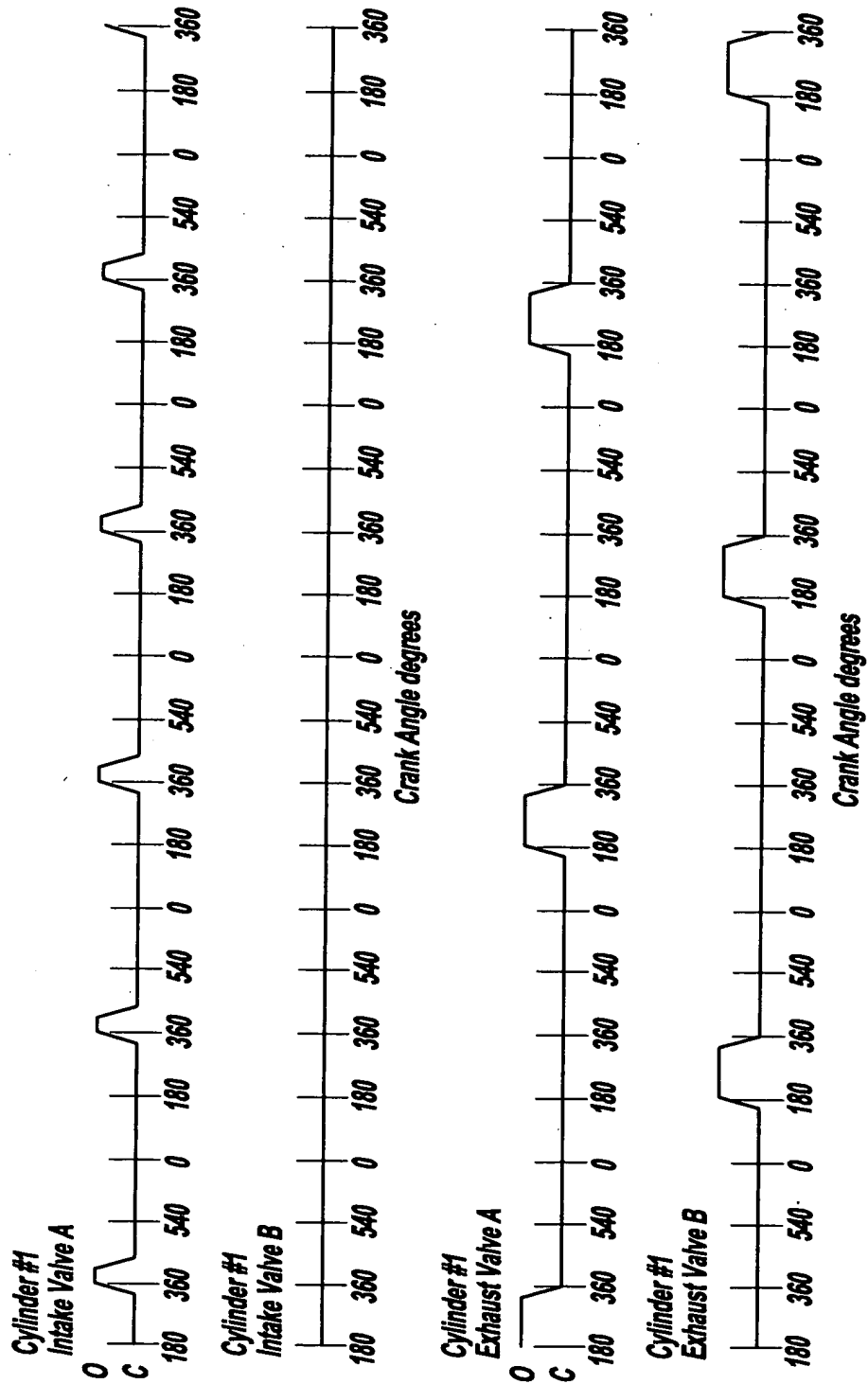
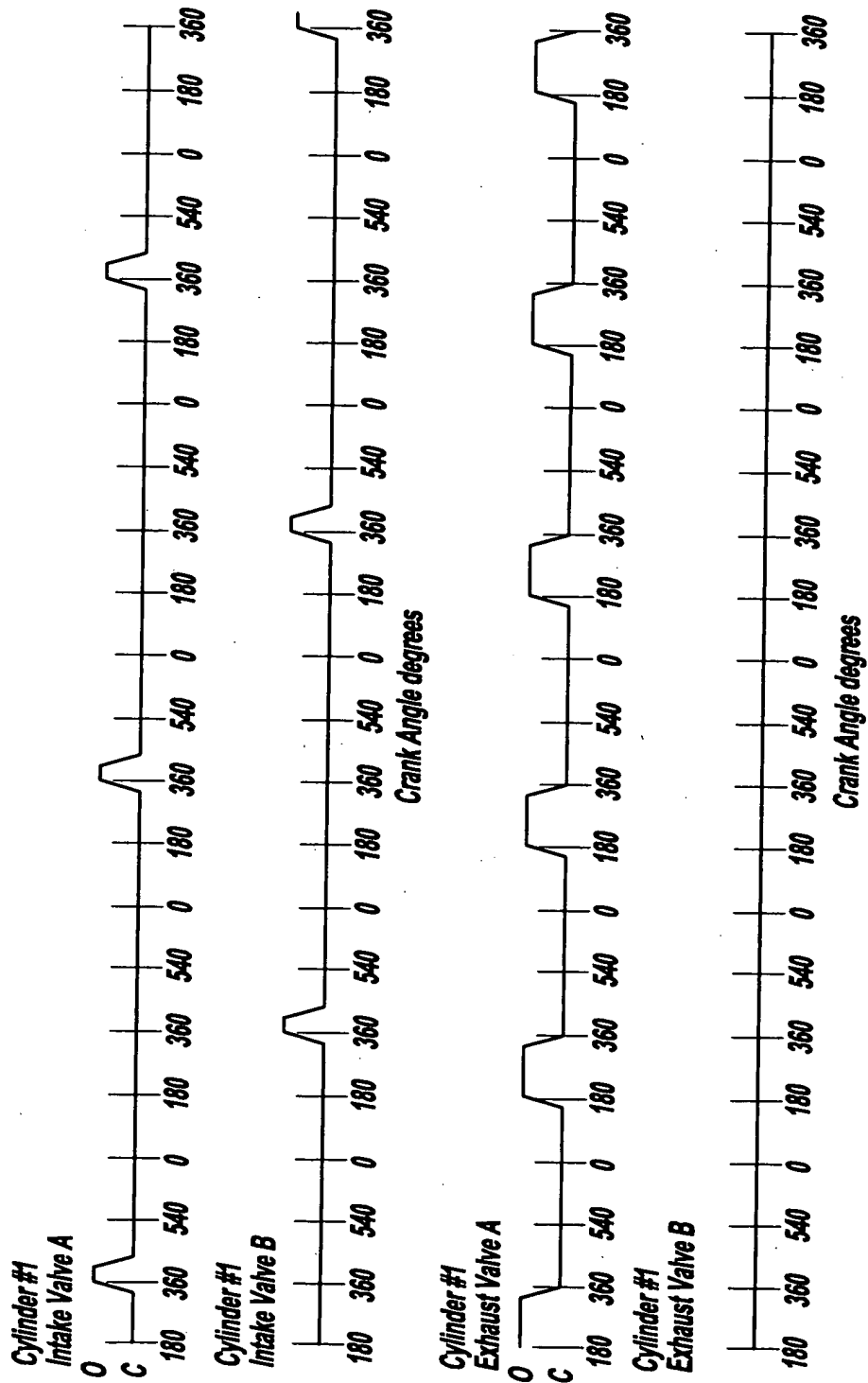


FIG - 46

**FIG - 47**

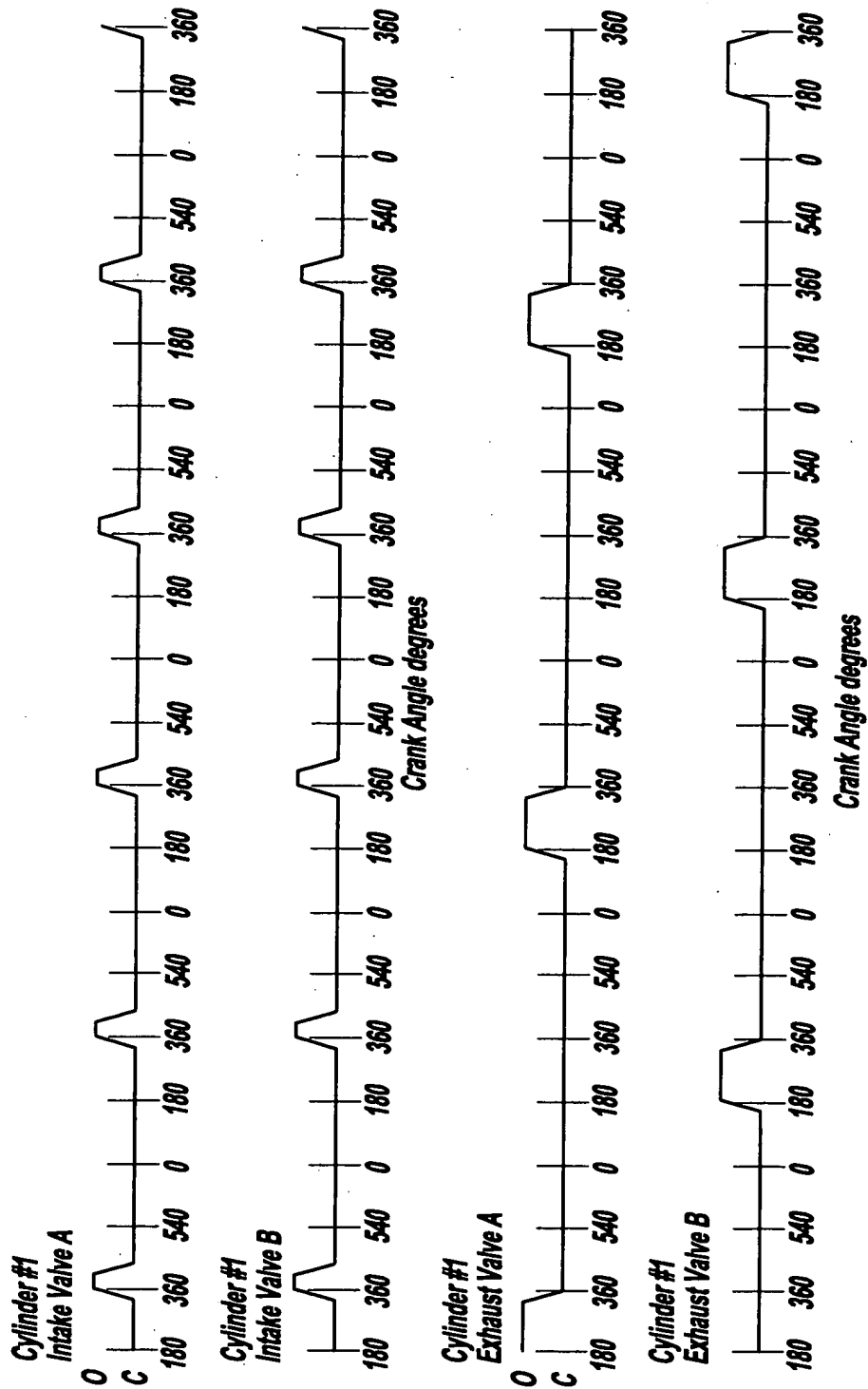
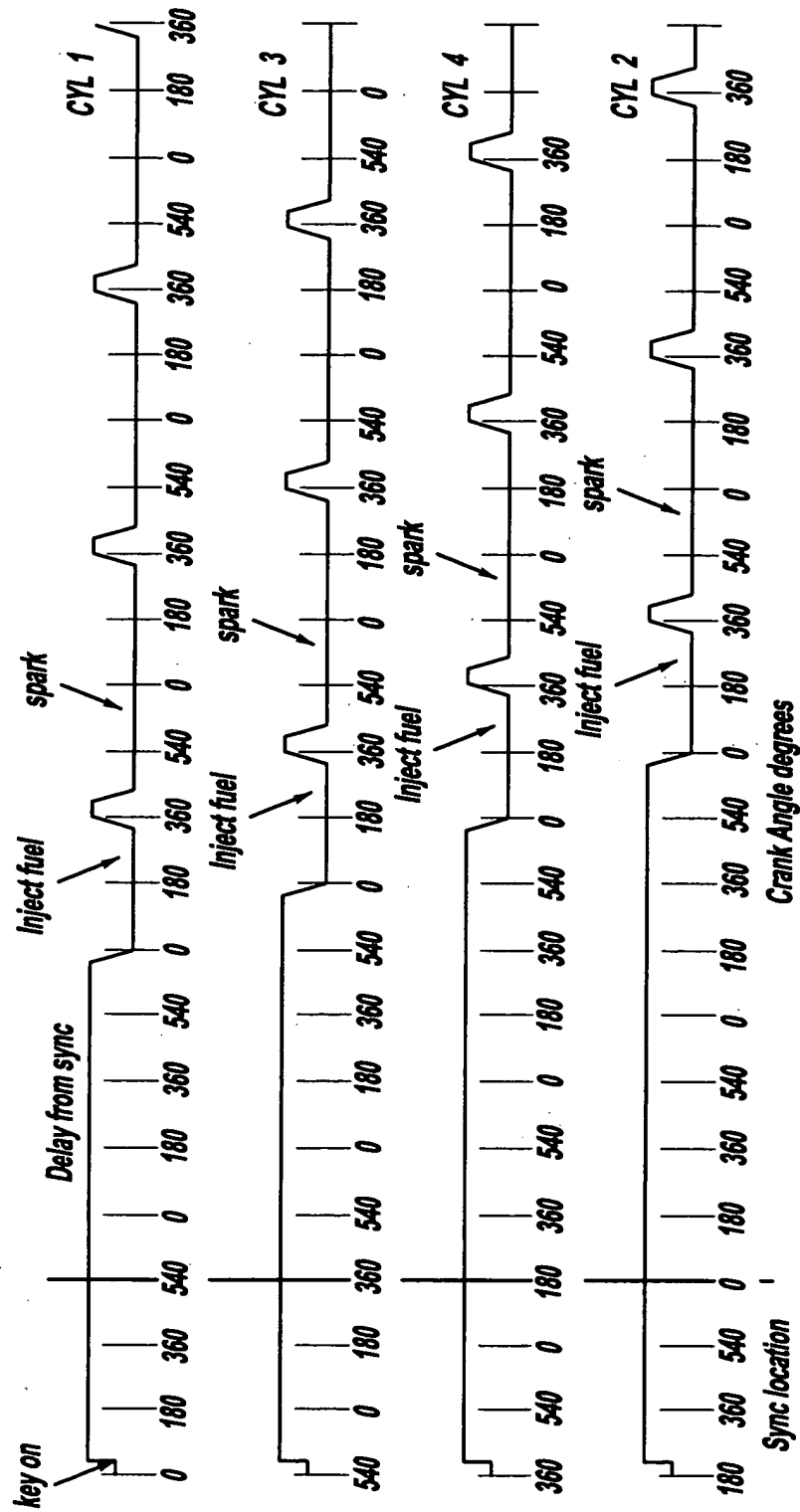
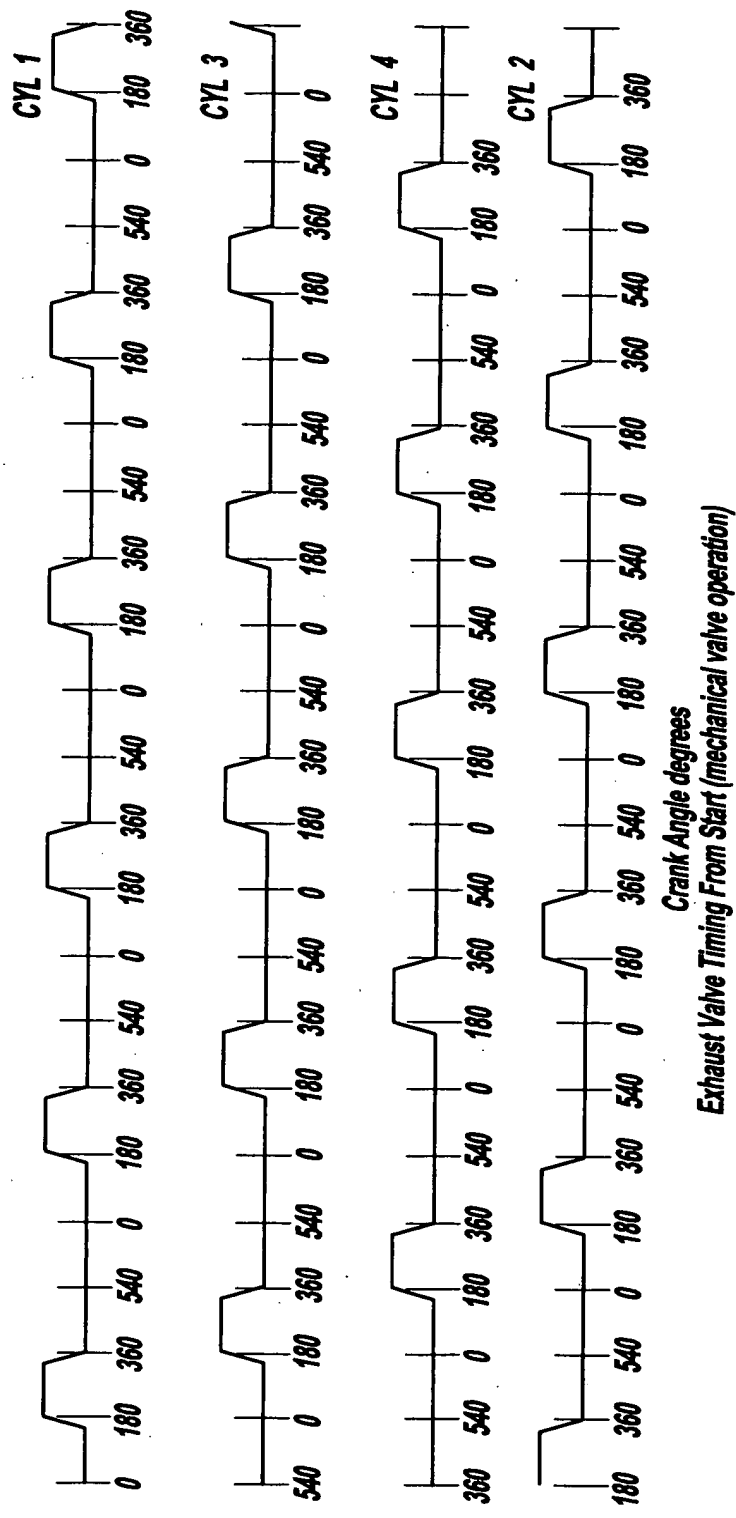


FIG - 48



Intake Valve Timing From Start (electrical valve operation)

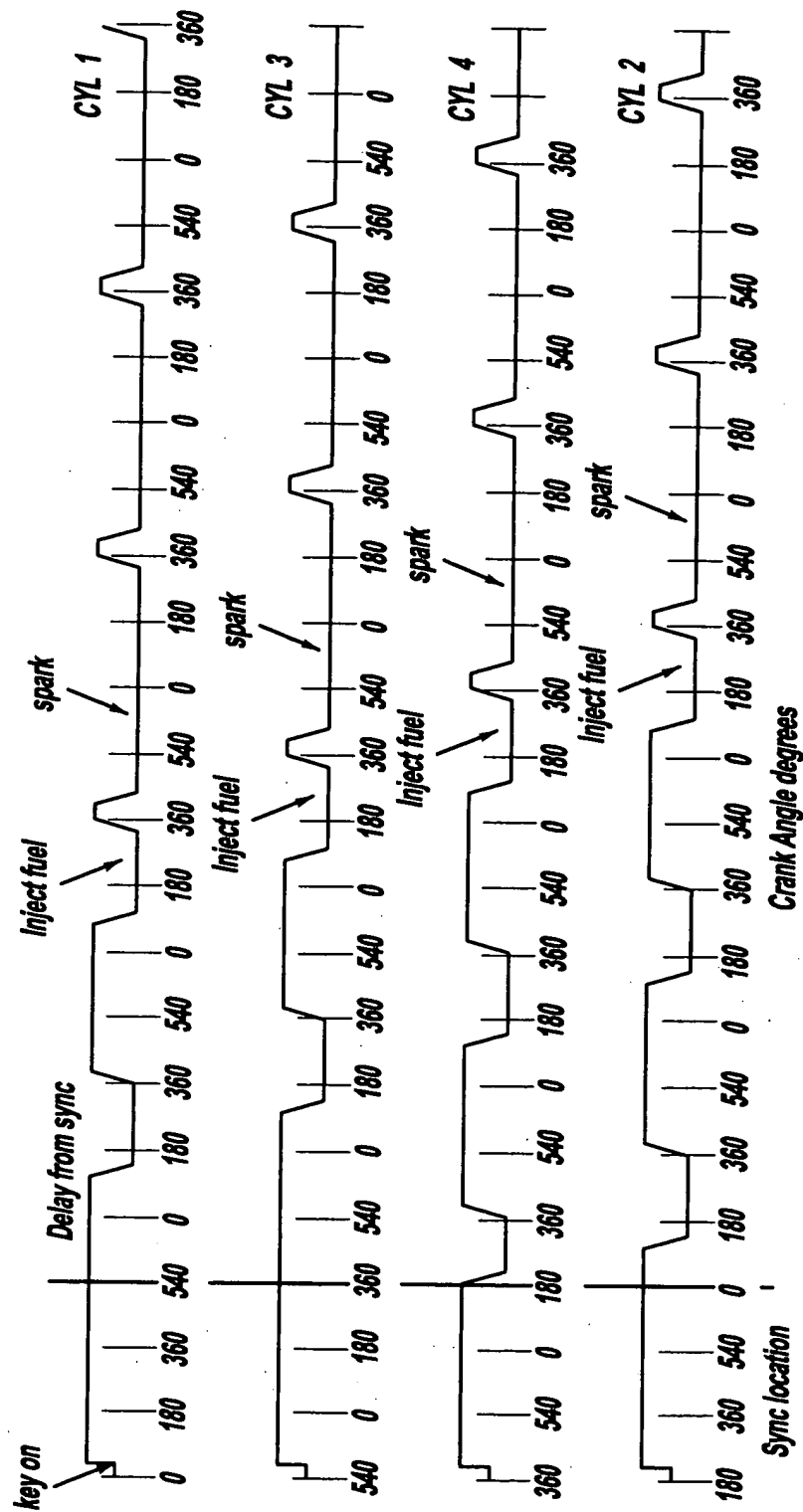
FIG - 49a

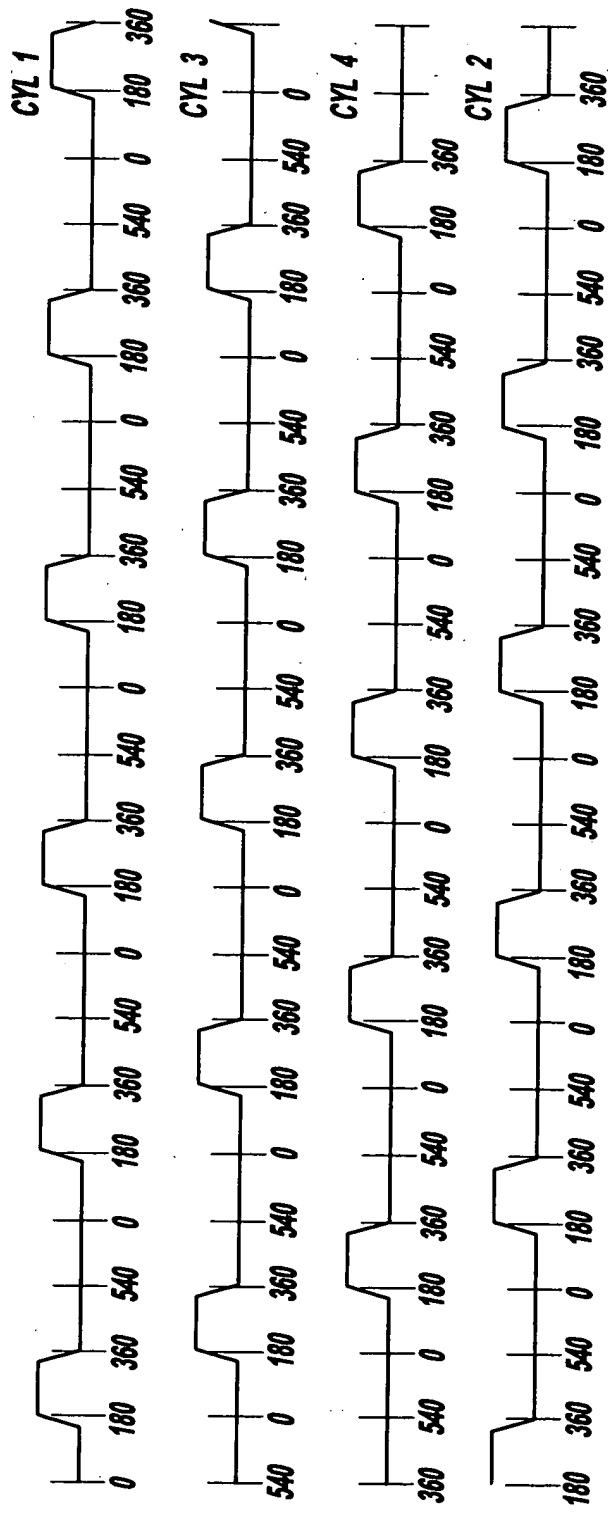


Cylinder piston position cyl 1 & 4

Cylinders 2 & 3

FIG - 49b

**FIG - 50a**



Crank Angle degrees
Exhaust Valve Timing From Start (mechanical valve operation)

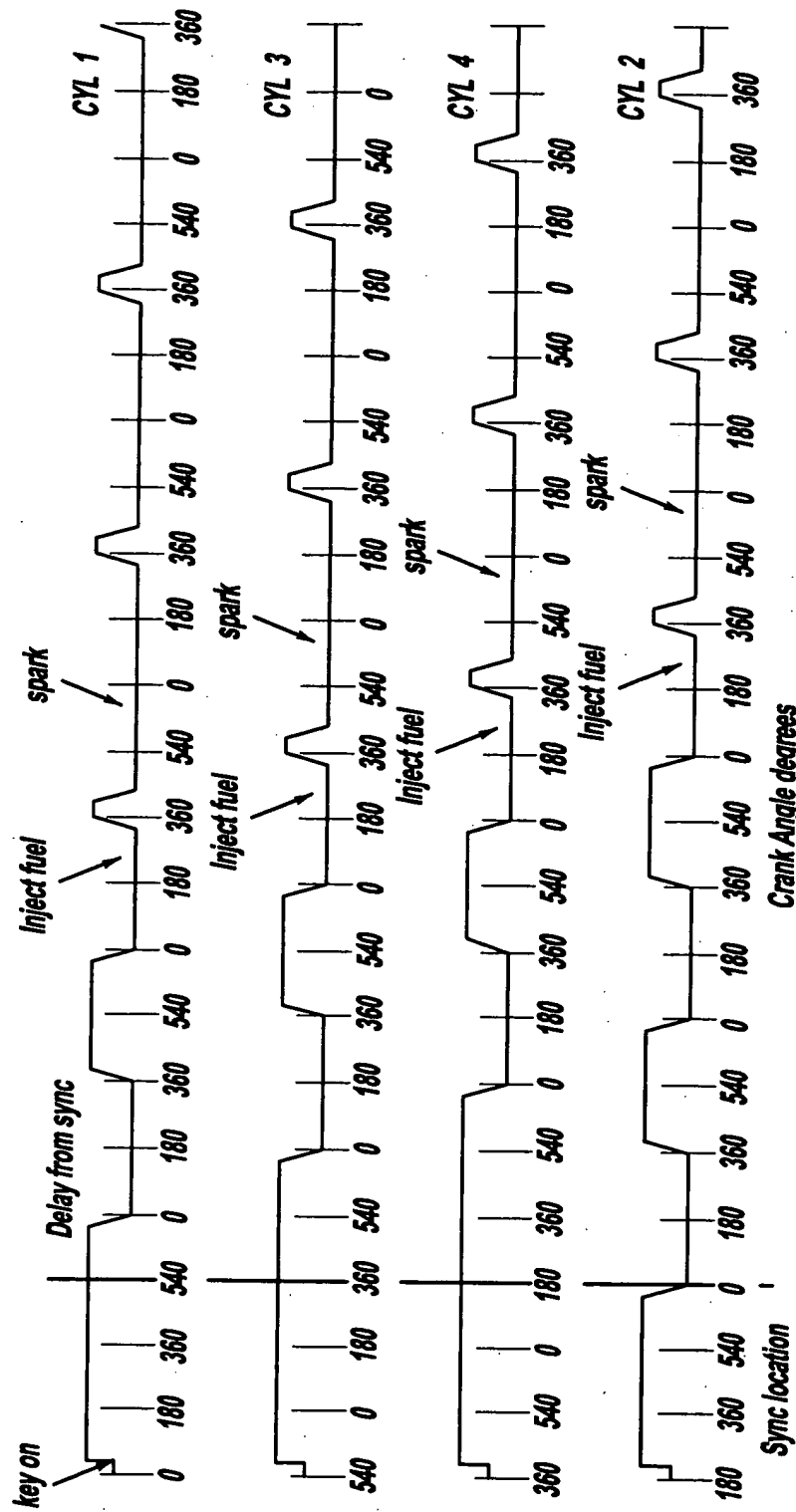
Cylinder piston position cyl 1 & 4



Cylinders 2 & 3



FIG - 50b



Crank Angle degrees
Intake Valve Timing From Start (electrical valve operation)

FIG - 51a

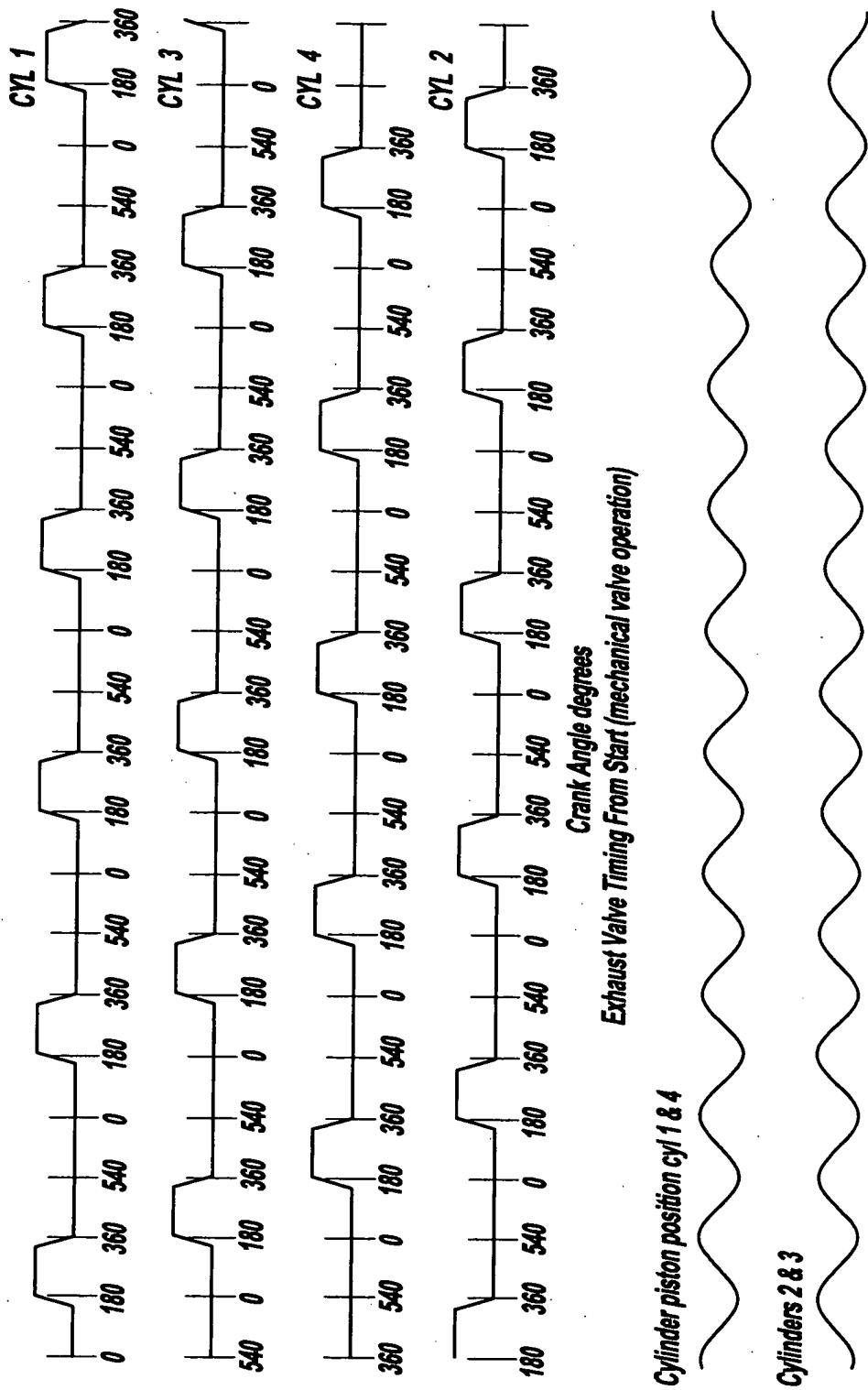
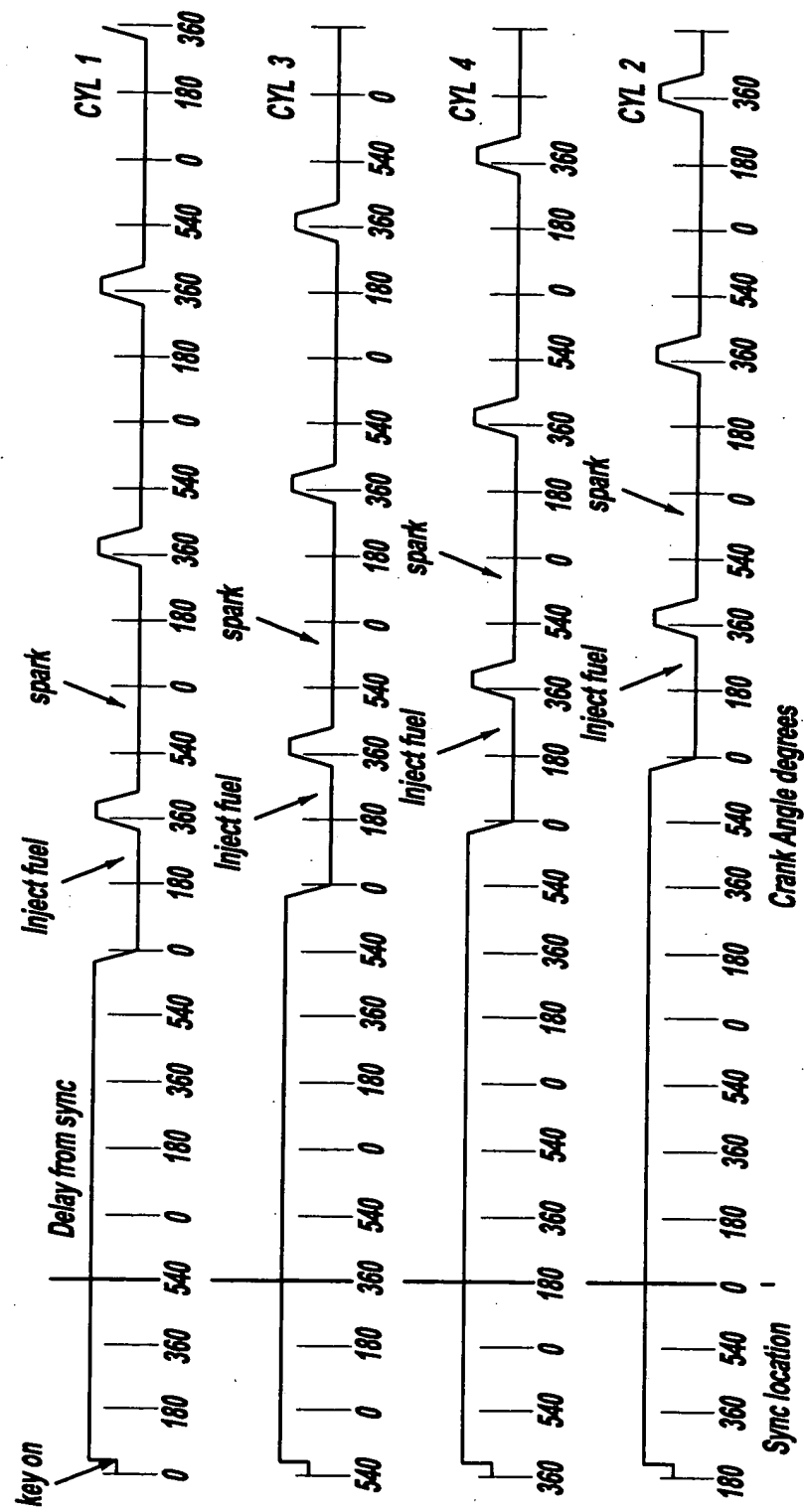
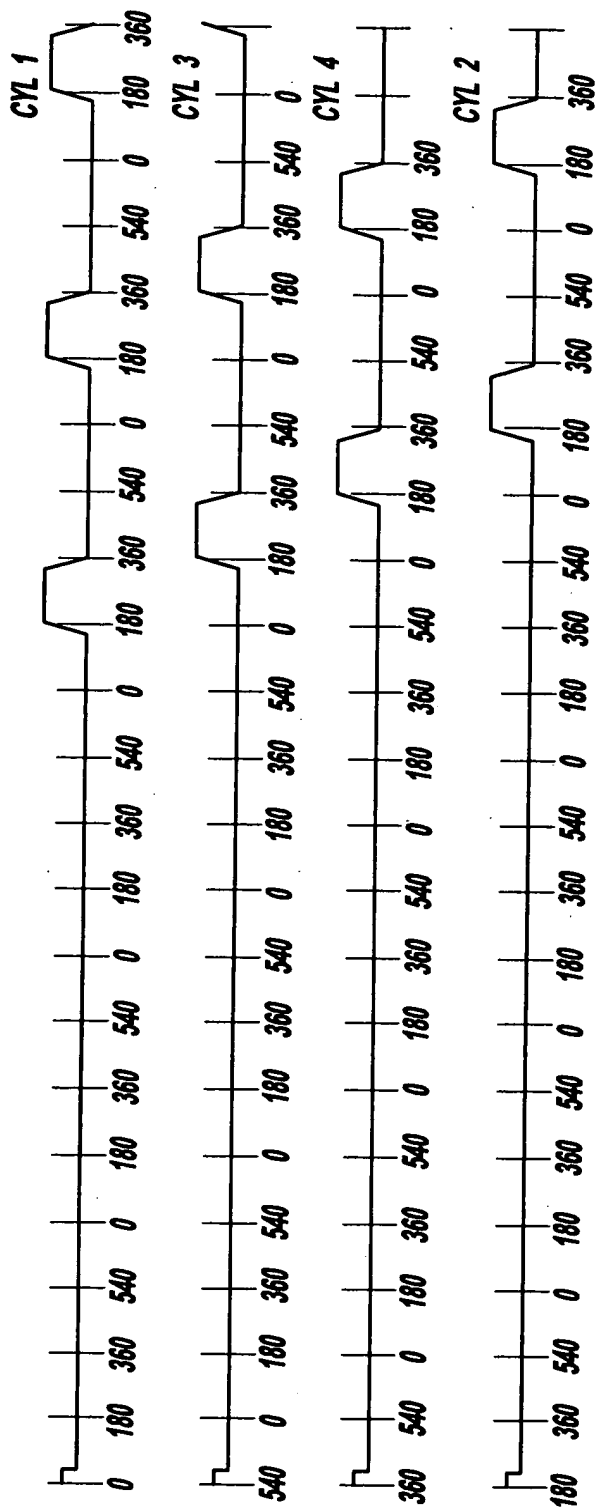


FIG - 51b



Crank Angle degrees
Intake Valve Timing From Start (electrical valve operation)

FIG - 52a



Exhaust Valve Timing From Start (electrical valve operation)

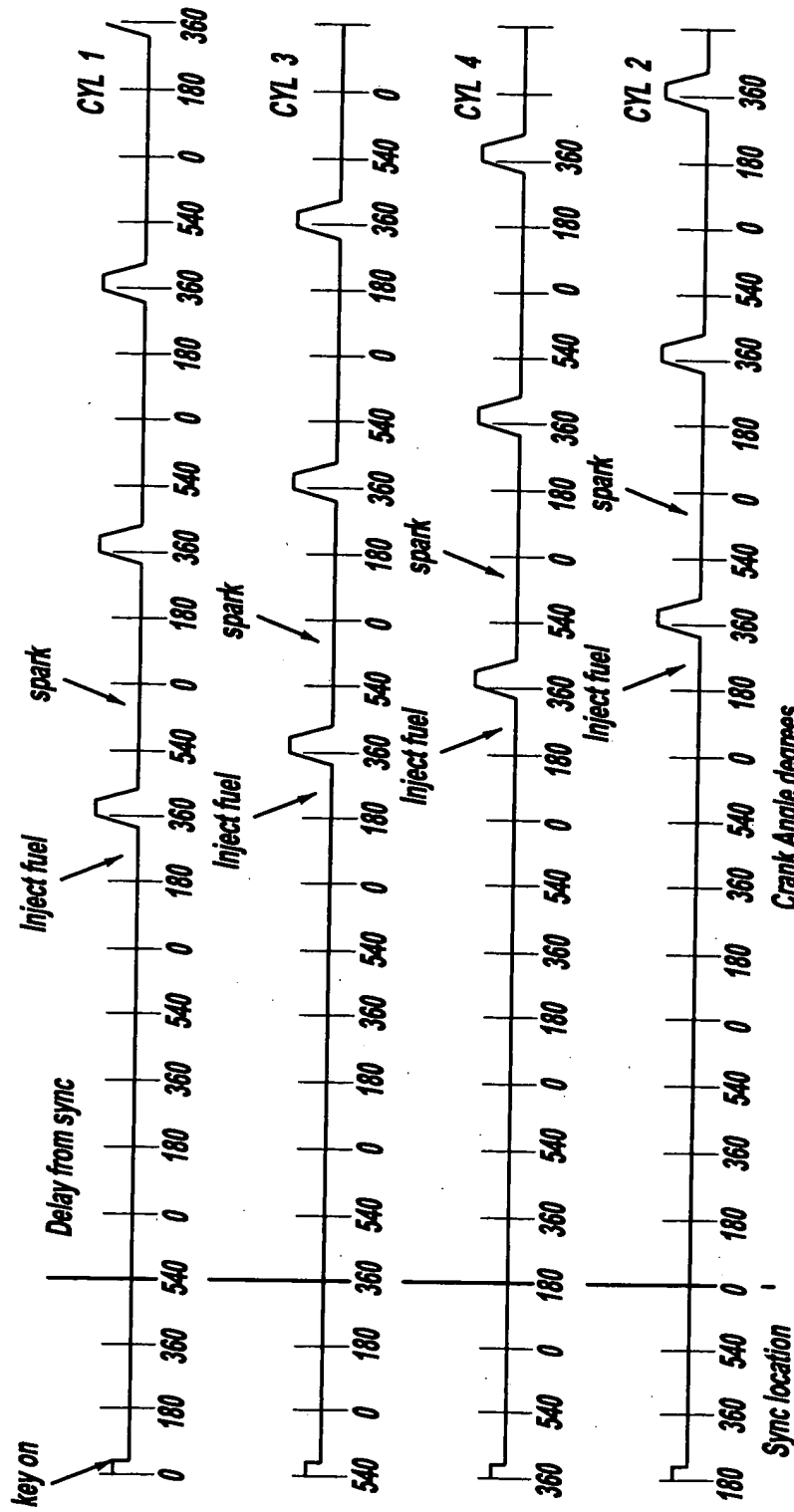
Cylinder piston position cyl 1 & 4



Cylinders 2 & 3

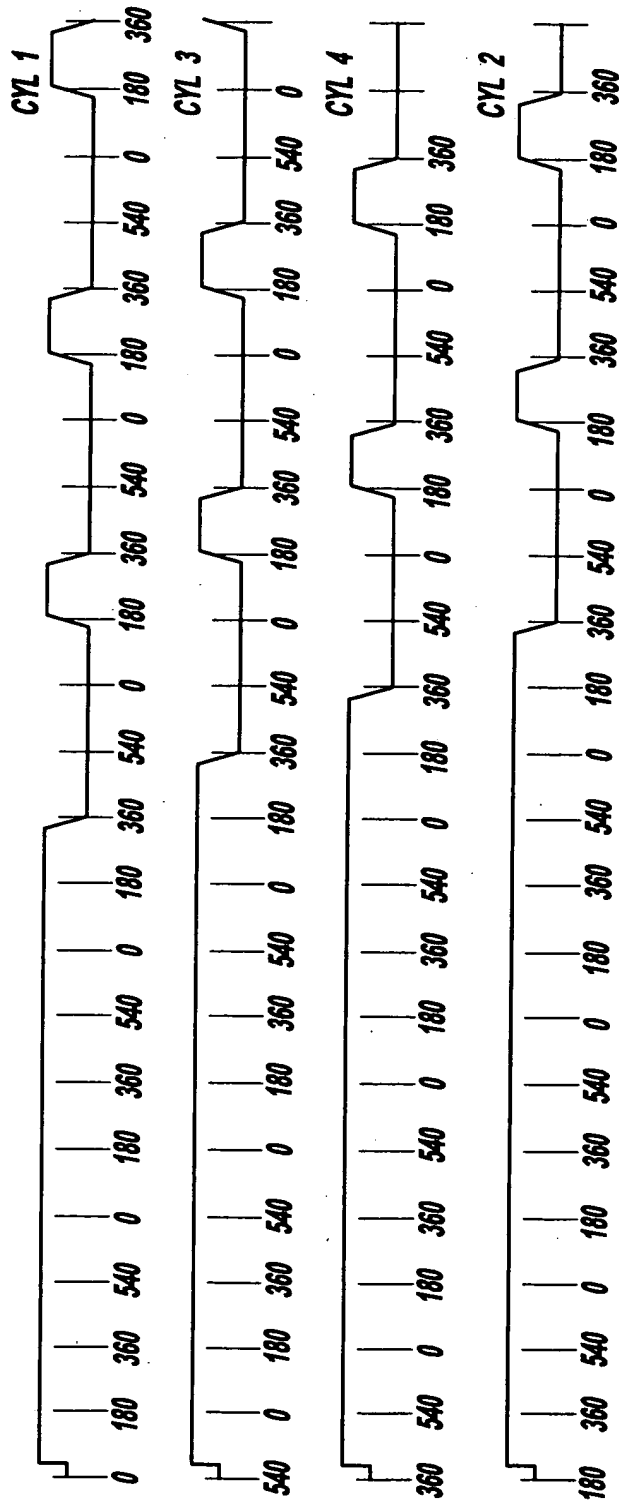


FIG - 52b



Crank Angle degrees
Intake Valve Timing From Start (electrical valve operation)

FIG - 53a

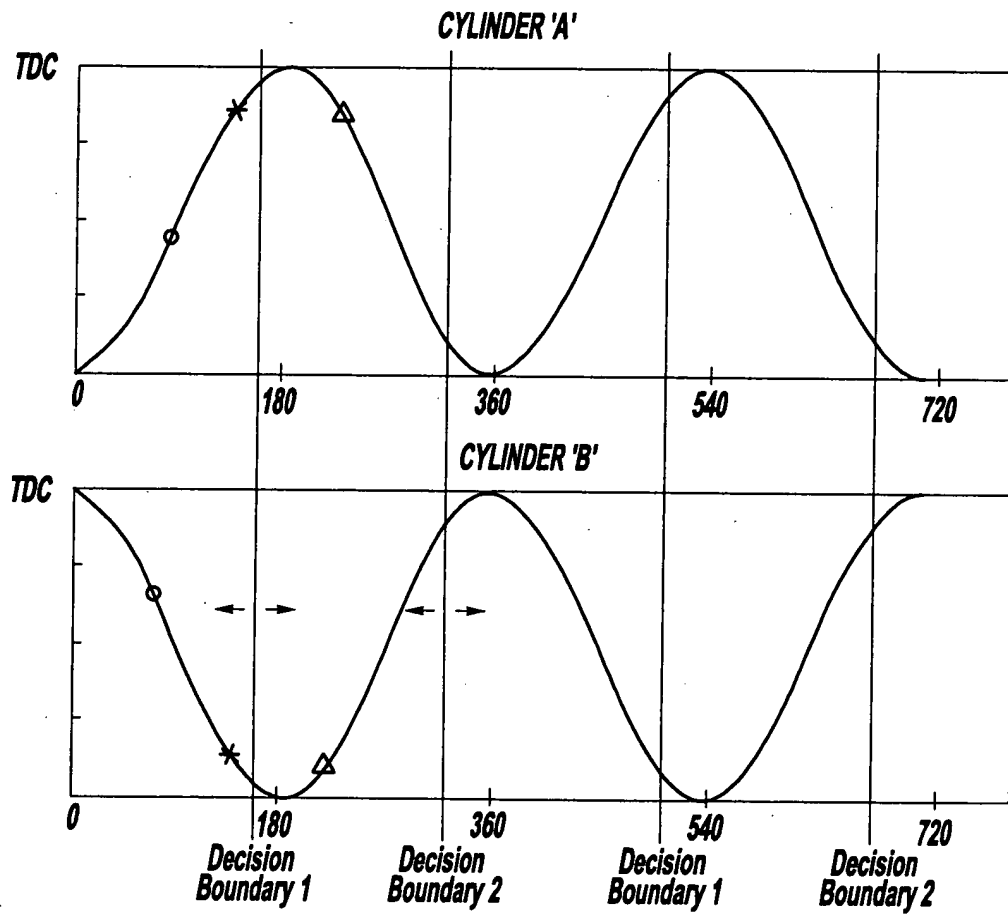


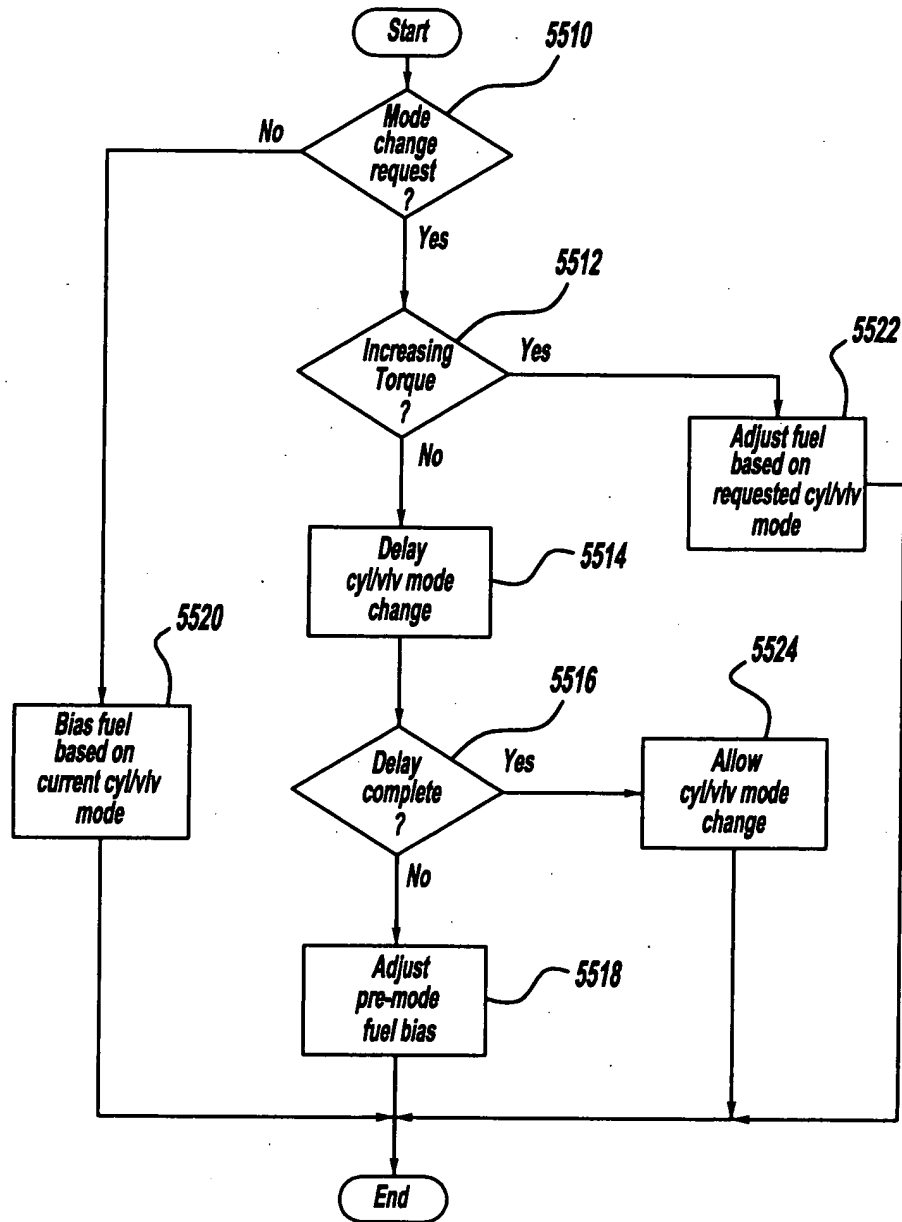
Crank Angle degrees
Exhaust Valve Timing From Start (electrical valve operation)

Cylinder piston position cyl 1 & 4

Cylinders 2 & 3

FIG - 53b

**FIG - 54**

**FIG - 55**